THE ENGINEERING AND MINING JOURNAL.

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American Institute of Mining Engineers.

FIFTH ANNUAL MEETING HELD AT DOVER, NEW JERSEY, MAY 25, 1875.

THE meeting was opened by the President, R. W. RAYMOND, in an introductory address, which was published in our last week's issue.

The following members and associates were then elected :*

m CHARLES ALBERT ASHBURNER, Philadelphia, Pa.
m THOMAS COUCH, Salt Lake City, Utah.
m CHARLES E. BILLIN, Philadelphia, Pa.
m LEOPOLD C. BIERWIRTH, Dover, N. J.
m RICHARD GEORGE, Dover, N. J.
m C. W. KIMPTON, Newburyport, Mass.
m GEORGE RICHARDS, Dover, N. J.
m W. J. TAYLOR, Chester, N. J.
m JAMES B. LEWIS, Dover, N. J.
m JAMES F. LEWIS, Amenia, Dutchess County, N. Y.
m JOHN R. PETERS, Dover, N. J.
m ARTHUR H. MEYER, St. Louis, Mo.
m CHARLES J. RADER, Vinton Station, Ohio.
m MOSES D. WHEELER, Virginia, Nevada.
m JOHN M. HARTMAN, Philadelphia, Pa.
a J. D. WEEKS, Pittsburgh, Pa.
a N. I. SCOTT, Easton, Pa.
m WALTER TEFFT, Mineville, Essex County, N. Y.
m PHINEAS BARNES, Pittsburgh, Pa.
m WILLIAM S. CHERRY, Streator, Ill.
m HENRY WOODS, Streator, Ill.
m ALEXANDER H. SHERRARD, Scranton, Pa.
m JEROME L. BOYER, Temple, Berks County, Pa.
m FLORIAN ALEXANDER, Newark, N. J.
m W. S. SWEENY, Easton, Pa.
m W. M. REES, Stockton, Luzerne County, Pa.
m CHARLES J. NORWOOD, Lexington, Ky.
m EDWARD H. MORRISON, Powerville, N. J.
m J. Y. BERGEN, Chicago, Ill.
a THOMAS D. JONES, Ashton, Carbon County, Pa.
m W. S. DE CAMP, Powerville, Pa.
a THOMAS DONALDSON, Boise City, Idaho.
m H. FIRMSTONE, Easton, Pa.
m FRANZ FOHR, New York City.
m J. ALEXANDER TYLER, New York City.
m WILLIAM WHEATLEY, jr., New York City.

After announcement of programme for excursions and sessions, by the local committee, Prof. J. C. SMOCK, of the New Jersey Geological Survey, addressed the Institute on the ore districts of Northern New Jersey, with especial reference to the mines to be visited by the members in the projected excursions.

SECOND SESSION, WEDNESDAY EVENING.

The President, R. W. RAYMOND, presented, on behalf of the Council, the following annual report :

The Council of the Institute report that during the past year the usual three meetings have been held—to wit, in St. Louis, Mo. ; Hazleton, Pa. ; and New Haven, Conn.

At these meetings there were elected 100 members, 47 associates, and 5 foreign members—in all 152. The membership of the Institute now comprises 4 honorary members, 4 life members, 46 foreign members, and 377 members and associates—in all 431.

The papers contributed to the Institute during the year were as follows :

1. Phosphorus and Carbon in Iron and Steel, by R. W. RAYMOND.
2. A Safety Plummet Lamp, by ECKLEY B. COXE.
3. The Pan-cake Coal of Nevada, by A. J. BROWN.
4. Occurrence of Antimony in Arkansas, by C. P. WILLIAMS.
5. A New Coal Cutting Machine, by J. S. ALEXANDER.
6. Hydro-Geology, by PERSIFOR FRAZER, Jr.
7. Experiments with Iron and Steel Rails, by T. EGLESTON.
8. Occurrence of Lead Ores in Missouri, by J. R. GAGE.
9. Volumetric Estimation of Zinc by Metallic Silver, by A. STEITZ.
10. On the Condition of Carbon in White and Gray Iron, by T. M. DROWN.
11. A New Barometer for Measuring Altitudes, by PERSIFOR FRAZER, Jr.
12. The Mechanical Preparation of Anthracite, by R. P. ROTHWELL.
13. On Rock Drilling, by E. G. SPILSBURY.
14. Wastes at American Smelting Works, by A. EILERS.
15. On the Mechanical Analyses of Rocks, by T. EGLESTON.
16. Some Experiments on Coking Coals under Pressure, by E. T. COX.
17. Arkansas Semi-Anthracite Coal, by W. B. POTTER.
18. The Zinc Process at Carondelet, by J. W. PACK.
19. Deep Boring with the Diamond Drill (Supplementary Paper), by O. J. HEINRICH.
20. Method of Taking the Horizontal Section of a Blast Furnace, by F. FIRMSTONE.
21. Coal Washing in the Broad Top Region, by J. FULTON.
22. Anthracite Furnaces in 1840, by WM. FIRMSTONE.
23. Mining Clay, by J. C. SMOCK.
24. Deep Boring with the Diamond Drill (Supplementary Paper), by O. J. HEINRICH.
25. Mining Statistics of Austria, by DR. J. BURKHART.
26. Gas Re-Heating Furnace, by W. A. SWEET.
27. Notes on the Hoosac Tunnel, by T. STERRY HUNT.
28. A Method of Topographical Surveying, by R. P. ROTHWELL.
29. Economy of the Blast Furnace, by B. W. FRAZIER.
30. The Wilmington Coal Fields of Illinois, by J. JOHNSON.
31. The History of the Relative Values of Gold and Silver, by R. W. RAYMOND.
32. On Some Recent Results Obtained by Exploration with the Diamond Drill, by Gen. H. PLEASANT.
33. A Campaign in Railroad District, by O. H. HAHN.
34. The Original Cross Section of Jeddo Tunnel, by MARTIN CORYELL.
35. The Ore Knob Copper Mine and the Hunt and Douglas Copper Process, by E. E. OLCOTT.
36. The Decarburization of Spiegeleisen, by R. W. RAYMOND.
37. Blast Furnace Economy, by H. M. HOWE.
38. The Metallurgy of Quicksilver in North California, by T. EGLESTON.
39. The Musconetcong Tunnel, by H. S. DRINKER.
40. On the Provision for the Health and Comfort of Miners, by W. P. BLAKE.
41. The American Method of Treating by Distillation the Zinc-, Silver-Lead Alloy obtained in the Desilverization of Lead by Zinc, by A. EILERS.
42. The Eastern Virginia Coal Field, by MARTIN CORYELL.
43. The Silver Mine at Newburyport, Mass., by R. H. RICHARDS.
44. The Ores, Fuels and Fluxes of the Connelsville Region, by E. C. PECHIN.
45. The Frue Concentrator, by WALTER MCDERMOTT.
46. Coking of Indiana Block Coal, by J. S. ALEXANDER.
47. The Whale Lode of Park County, Colorado, by J. L. JERNEGAN.
48. The Occurrence of the Brown Hematite Deposits of the Great Valley, by FRED. PRIME, Jr.
49. Note on the Transformation of the Brown Hematites of Huntington Co., Pa., by C. CONSTABLE.
50. Remarks on Some Thin Sections of the Lower Paleozoic and Mesozoic Rocks of Pennsylvania, by PERSIFOR FRAZER, Jr.
51. Progress of American Metallurgy in the West for the Past Year, by A. EILERS.
52. On the Geographical Distribution of Iron Ores, by HENRY NEWTON.
53. The Production of Coal in the United States, by R. P. ROTHWELL.
54. The Fires in the Mines at Wilkes-Barre, by T. M. WILLIAMS.
55. Maps and Sections of Mines in Utah, by W. BREDEMEYER.

The excursions incident to the meetings have been productive of great professional profit and social enjoyment. Among the most prominent may be mentioned Iron Mountain, Pilot Knob, Mine La Motte, in Missouri, and the prominent iron and zinc works in the vicinity of St. Louis ; the Block Coal Fields at Brazil, Indiana, and the collieries and shops at or near Hazleton. At New Haven, the Institute had the opportunity of inspecting the rare and valuable collections and the laboratories of the various departments of Yale College.

During the year the second volume of Transactions of the Institute has been published, covering the period from May, 1873, to February, 1874.

The vitality and energy of the Institute, as indicated in the above outline of its work and progress during the year, must be a source of gratification to all its members.

The finances of the Institute are in a satisfactory condition. The report of the auditors appointed to examine the Secretary's and Treasurer's accounts, show a balance on hand on May 4th, of $160 40, and no liabilities. The amount received for the year was $3,261 94.

The Institute has lost three of its most prominent members by death, during the year—Mr. S. H. DADDOW, of St. Clair, Pa. ; Mr. HERMANN STOELTING, of Georgetown; and Dr. BURKHART, of Bonn, Prussia.

The Council has appointed as Committee on the Reception of Foreign Mining Engineers and Metallurgists during the Centennial—Messrs. E. B. COXE, THOS. EGLESTON, J. S. ALEXANDER, and R. W. RAYMOND.

The report was unanimously accepted by the Institute.

Mr. PECHIN proposed to amend Rule VI., by changing the annual meeting from May to February. After some discussion the amendment was withdrawn.

Mr. RAYMOND offered the following amendment to Rule III., to insert after "foreign countries," *excepting Canada*.

Mr. RAYMOND explained that the exemption of foreign members from regular dues was but just, since they could not attend the meetings of the Institute, but that residents of Canada lived as near the usual places of meeting as many of our own members, and that exemption in such cases did not seem called for. The amendment was adopted.

Mr. E. B. COXE proposed the following amendment to Rule IV.—"That each retiring president shall be ex-officio member of the Council for one year."

After some discussion the amendment was lost.

Mr. DROWN exhibited a specimen of sylvanite which he had received from Mr. MCDERMOTT, of Silver Islet, who gives the following account of its occur-

* In this list are included all the members and associates elected at the four sessions of the Institute.

rence. The specimen was obtained from the Shebandowan gold mine—a vein discovered some three years ago, about 100 miles west of Silver Islet, on, or rather near, the route to Red River. The vein is quartz and occurs in a talcose slate belt associated with massive diorite and occasional bands of magnetic iron ore, all of the Huronian formation. The vein carries large quantities of copper pyrites, zinc blende and some galena. Native gold is found in portions of the rock, and generally accompanied by the sylvanite which is, in parts, quite massive.

Dr. DROWN further exhibited a specimen of white, and apparently pure, cyanide of potassium taken from a disused tuyere at the Crane Iron Works at Catasauqua. Mr. JOSEPH HUNT, who sent the specimen, said that he removed the deposit from the tuyere every day, and that he had taken out in all 60 lb. or more, not, however, all in so pure a condition as the sample.

Mr. THOMAS DONALDSON, of Boise City, Idaho, gave an account of the discovery and exploitation of the great Bonanza on the Comstock Lode.

Prof. W. P. BLAKE then read a paper on Mining Machinery on the Pacific Coast, concluding the evening session.

THIRD SESSION, THURSDAY AFTERNOON.

Mr. E. B. COXE proposed that the rules be amended to increase the number of vice-presidents to nine and of managers to fifteen. After discussion, the subject was laid over for one year.

Mr. E. C. PECHIN proposed the following amendment to Rule VIII. to add—"and only after written and published notice of the proposed amendment at a previous meeting." This amendment was adopted.

Mr. J. B. PEARSE proposed the following amendment to Rule VII., to add—"and it is understood that papers or discussions should not include matters relating to politics or purely to trade." The amendment was adopted.

Mr. A. L. HOLLEY then read a communication from Mr. T. S. BLAIR, of Pittsburgh, on his direct process, correcting a few inaccuracies in Mr. BELL's recent address before the Iron and Steel Institute of Great Britain. Prof. G. H. COOK, State Geologist of New Jersey, followed with a paper on some points in the geology of Nothern New Jersey.

A paper by ELLIS CLARK, Jr., of the Pennsylvania Geological Survey, on The Subterranean Water Courses in the Magnesian Limestones of Schuyler County, Penn., was then read in the absence of the author.

The session concluded by a communication by Prof. T. EGLESTON, on the Bastie Annealed Glass.

FOURTH SESSION, THURSDAY EVENING.

The following papers were read:

On the Repairing of the Upper Part of a Furnace Lining, by Mr. F. FIRMSTONE.

On Puddling with Natural Gas near Pittsburgh, by Mr. A. L. HOLLEY.

On the Causes and Prevention of Fire in Coal Mines, by Mr. R. P. ROTHWELL.

On a Classification and Enumeration of the Principal Useful Minerals and Mineral Products, by Prof. W. P. BLAKE.

The following were read by title:

The Swansea Silver Smelting and Refining Works, by Mr. J. L. JERNEGAN; and The Progress and Experience with Lürmann's Closed Fronts for Blast Furnaces, and Some Remarks on Bronze Tuyeres, by Mr. GEO. ASMUS.

The Scrutineers of Election, Messrs. J. M. SILLIMAN and H. M. HOWE, appointed at a previous meeting, reported the following officers elected:

President—ALEX. L. HOLLEY.

Vice-Presidents—R. P. ROTHWELL, EDMUND C. PECHIN, FRANK FIRMSTONE.

For Unexpired Term of Mr. HOLLEY—JOHN FRITZ.

For Managers—OSWALD J. HEINRICH, ANTON EILERS, JOHN C SMOCK.

For Treasurer—THEODORE D. RAND.

For Secretary—THOMAS M. DROWN.

Mr. E. C. PECHIN then offered the following resolutions, which were unanimously adopted, after which the sessions of the Institute were adjourned:

Resolved, That the thanks of the Institute be conveyed through the Secretary to Mr. A. RAESONER, Superintendent of the Morris and Essex Railroad, for his kindness in providing railroad facilities for our excursions; to the Young Men's Christian Association of Dover, for the use of their room; to the Chester Iron Co., and the officers of the Hibernia and Ogden Mine Railroads, for their courtesy in offering the pleasant excursions which have been so highly enjoyed by the Institute; to Messrs. GEORGE, RICHARDS and TAYLOR, for courtesies tendered, and to the Local Committee for their admirable arrangements.

Resolved, That the members of the Institute desire to express in the most emphatic manner their high appreciation of the thoughtful energy, the tact, judgment and graceful administration of Mr. R. W. RAYMOND, who, for nearly four years, has presided over the deliberations of the Institute.

EXCURSIONS.

The members present had the opportunity of visiting the magnetic ore mines in the vicinity of Dover, and the zinc and franklinite deposits at Sterling and Franklin. The programme of excursions, for which the Local Committee of Arrangements, Mr. MOFFAT and the Messrs. CANFIELD, have the most hearty thanks and praise, was as follows:

On Wednesday morning, the Institute left by special train on the M. and E. Railroad for the Canfield, Dickerson and Byram mines. An opportunity was here afforded by the Messrs. CANFIELD for the inspection of their valuable, and in many respects unique, collection of minerals. The minerals of Northern New Jersey are here represented in the greatest richness and profusion.

At noon, the Institute proceeded on its trip to the Hacklebarney mine of the Chester Iron Company, and subsequently were hospitally entertained by the Company at dinner at Chester. After dinner, the Hedge mine of the North Jersey Iron Company was visited, under the direction of its polite Manager, Mr. W. J. TAYLOR.

On Thursday morning the Hibernia Mines were inspected, including the workings of the Andover, Glendon and Bethlehem Companies.

For Friday, the Local Committee arranged a programme, which will long be remembered by the Members of the Institute with the keenest delight. Rarely is the pursuit of knowledge surrounded with such delightful associations. At 7:30 A.M., the special train left for Hopatcong Station, on the M. and E. Railroad. Here the members embarked on the little steamer Stella, which bore the party pleasantly through canal and lake to Nolan's Point. Here cars of the Ogden Mine R. R. were in waiting to take the party to the Hurd, Ford, Dodge, Ogden and other mines on the line of the road.

At the Ogden Mine teams were taken to Ogdensburg, a distance of 2½ miles, where the party dined. The afternoon was devoted to visits to the renowned zinc and franklinite localities of Sterling and Franklin. At the latter place the President and some of the officers of the N. J. Zinc Co. courteously received the members of the Institute, and provided them with cooling refreshments to support them on their way. The party broke up at Franklin, each member devoutly wishing that he might again fall into the hands of a local committee who could arrange a meeting equal to the "Fifth Annual" at Dover.

Notes.

Chrome Iron Ore.—Twelve miles from Chico, Cal., a ledge said to be 10 to 20 feet thick has been found, ore said to yield 60 per cent.

Clearfield Mines.—The following corrections should be made in the list of mines we published May 22d:

Kittanning Coal Company's Collieries.			
Philadelphia Colliery	Estimated capacity	100 tons.	
Beaver Colliery	"	"	250 "
Franklin Colliery	"	"	750 "

Since our note was made the strike has ended in the Clearfield region and most of the collieries are putting out their usual quota of coal.

Organization of the U. S Board appointed to test Iron, Steel, etc.—Lt.-Col. T. T. S. LAIDLEY, U. S A., *President*: Commander L. A. BEARDSLEE, U. S. N.; Lt.-Col. Q. A. GILLMORE, U. S. A.; Chief Engineer DAVID SMITH, U. S. N.; W. SOOY SMITH, C. E.; A. L. HOLLEY, C. E.; R. H. THURSTON, C. E., *Secretary*. This Board is appointed by the President of the United States, in accordance with the provisions of Section 4, of "An Act making Appropriations for Sundry Civil Expenses of the Government, for the fiscal year ending June 30th, 1876, and for other purposes," approved March 3d, 1875. It is instructed to determine by actual tests the strength and value of all kinds of iron, steel and other metals which may be submitted to it, or by it procured, and to prepare tables which will exhibit the strength and value of said materials for constructive purposes.

STANDING COMMITTEES OF THE BOARD.

(A) ON ABRASION AND WEAR.—R. H. THURSTON, C. E., *Chairman*; A. L. HOLLEY, C. E.; Chief Engineer, D. SMITH, U. S N.

Instructions.—To examine and report upon the abrasion and wear of railway wheels, axles, rails and other materials, under the conditions of actual use.

(B) ON ARMOR PLATE.—Lt.-Col. Q. A. GILLMORE, U. S. A., *Chairman*; A. L. HOLLEY, C. E.; R. H. THURSTON, C. E.

Instructions.—To make tests of Armor Plate, and to collect data derived from experiments already made to determine the characteristics of metal suitable for such use.

(C) ON CHEMICAL RESEARCH.—A. L. HOLLEY, C. E., *Chairman*; R. H. THURSTON, C. E.

Instructions.—To plan and conduct investigations of the mutual relations of the chemical and mechanical properties of metals.

(D) ON CHAINS AND WIRE ROPES.—Commander L A BEARDSLEE, U. S. N., *Chairman*; Lt.-Col. Q. A. GILLMORE, U. S. A.; Chief Engineer D. SMITH, U. S. N.

Instructions—To determine the character of iron best adapted for chain cables, the best form and proportions of link, and the qualities of metal used in the manufacture of iron and steel wire rope.

(E) ON CORROSION OF METALS.—W. SOOY SMITH, C. E., *Chairman*; Lt.-Col. Q. A. GILLMORE, U. S. A; Commander L A. BEARDSLEE, U. S. N.

Instructions.—To investigate the subject of the corrosion of metals under the conditions of actual use.

(F) ON THE EFFECTS OF TEMPERATURE.—R. H. THURSTON, C. E., *Chairman*; Lt.-Col. Q. A. GILLMORE, U. S. A.; Commander L A. BEARDSLEE, U. S. N.

Instructions.—To investigate the effects of variations of temperature upon the strength and other qualities of iron, steel and other metals.

(G) ON GIRDERS AND COLUMNS.—W. SOOY SMITH, C. E., *Chairman*; Lt.-Col. Q. A. GILLMORE, U. S. A; Chief Engineer D. SMITH, U. S.N.

Instructions.—To arrange and conduct experiments to determine the laws of resistance of beams, girders and columns to change of form and to fracture.

(H) ON IRON, MALLEABLE.—Commander L. A. BEARDSLEE, U. S. N, *Chairman*; W. SOOY SMITH, C. E.; A. L. HOLLEY, C. E

Instructions.—To consider and report upon the mechanical and physical properties of wrought iron

(I) ON IRON, CAST.—Lt.-Col. Q. A. GILLMORE, U. S. A., *Chairman*; R. H. THURSTON, C. E.; Chief Engineer D. SMITH, U. S. N.

Instructions.—To examine and report upon the mechanical and physical properties of cast iron.

(J) ON METALLIC ALLOYS.—R. H. THURSTON, C. E., *Chairman*; Commander L. A. BEARDSLEE, U. S. N.; Chief Engineer D. SMITH, U. S. N.

Instructions.—To assume charge of a series of experiments on the characteristics of alloys, and an investigation of the laws of combination.

(K) ON ORTHOGONAL SIMULTANEOUS STRAINS.—W. SOOY SMITH, C. E, *Chairman*; Commander L. A. BEARDSLEE, U. S. N.; R. H. THURSTON, C. E

Instructions.—To plan and conduct a series of experiments on simultaneous orthogonal strains, with a view to the determination of laws.

(L) ON PHYSICAL PHENOMENA.—W. SOOY SMITH, C. E., *Chairman*; A. L HOLLEY, C. E.; R. H. THURSTON, C. E.

Instructions—To make a special investigation of the physical phenomena accompanying the distortion and rupture of materials.

(M) ON RE-HEATING AND RE-ROLLING.—Commander L. A. BEARDSLEE, U. S. N., *Chairman*; Chief Engineer D. SMITH, U. S. N.; W. SOOY SMITH, C. E.

Instructions.—To observe and experiment upon the effects of re-heating, re-rolling, or otherwise re-working; of hammering, as compared with rolling, and of annealing the metals.

(N) ON STEELS PRODUCED BY MODERN PROCESSES.—A. L. HOLLEY, C. E., *Chairman*; Chief Engineer D. SMITH, U. S. N.; W. SOOY SMITH, C. E.

Instructions.—To investigate the constitution and characteristics of steels made by the BESSEMER, open hearth, and other modern methods.

(O) ON STEELS FOR TOOLS.—Chief Engineer D. SMITH, U. S. N., *Chairman*; Commander L. A. BEARDSLEE, U. S. N.; W. SOOY SMITH, C. E.

Instructions.—To determine the constitution and characteristics, and the special adaptations of steels used for tools.

The above-named Committees of this Board are appointed to conduct the several investigations, and the special researches assigned them in the interval during which the regular work of the Board is delayed by the preparation of the necessary testing machinery, and during such periods of leisure as may afterward occur.

These investigations are expected to be made with critical and scientific accuracy, and will, therefore, consist in the minute analysis of a somewhat limited number of specimens and the precise determination of mechanical and physical properties, with a view to the detection and enunciation of the laws connecting them with the phenomena of resistance to flexure, distortion and rupture.

The Board will be prepared to enter upon a more general investigation, testing such specimens as may be forwarded to the President of the Board, or such as may be determined to purchase in open market, immediately upon the completion of the apparatus ordered, at which time circulars will be published giving detailed instructions relative to the preparation of specimens for test, and stating minutely the information which will be demanded previous to their acceptance.

R. H. THURSTON, Secretary of the Board.

The Winstanley Coal Cutter.

THIS machine belongs to the class of rotary coal cutters. The cutting disc is revolved by means of two oscillating cylinders; this simplifies the machine, as does also the arrangement of the arm that carries the cutting disc. This arm revolves about a strong axis, A, and may be turned by means of a hand-worked worm wheel, B, set back under the machine.

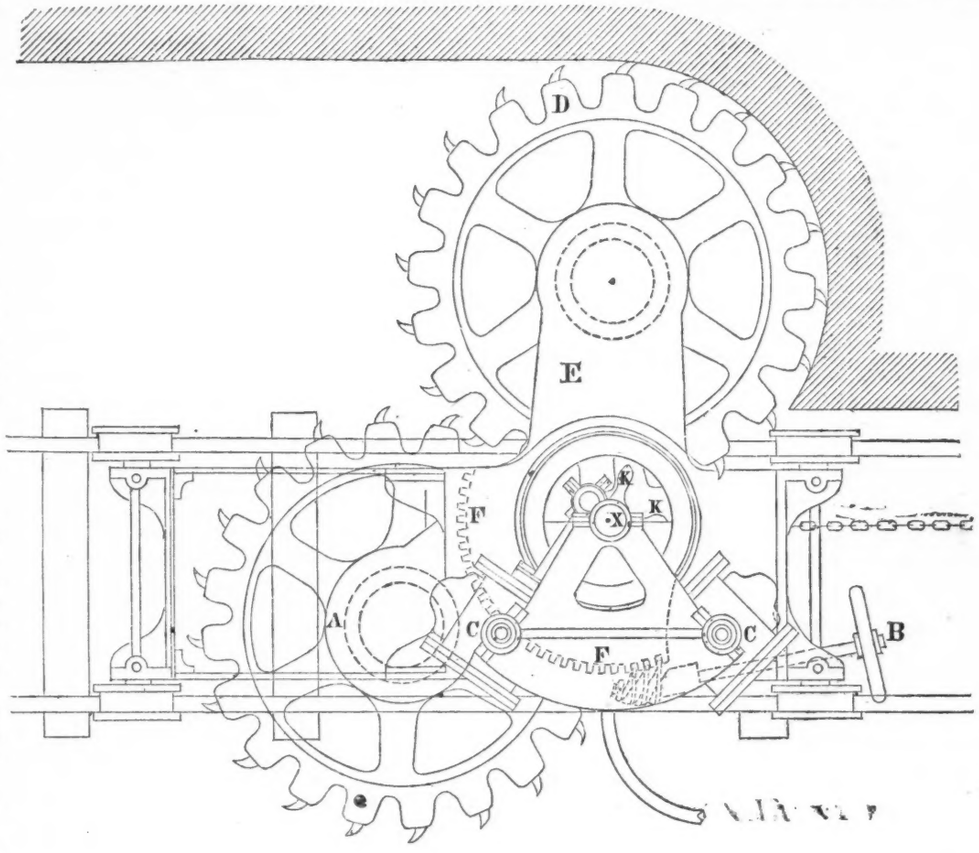
This arrangement renders it unnecessary to open a place in the coal for commencing work; the machine can commence at any point; the man working it simply presses the cutter forward by turning the worm B, till it stands at right angles to the track, when the whole machine is drawn forward in the usual manner.

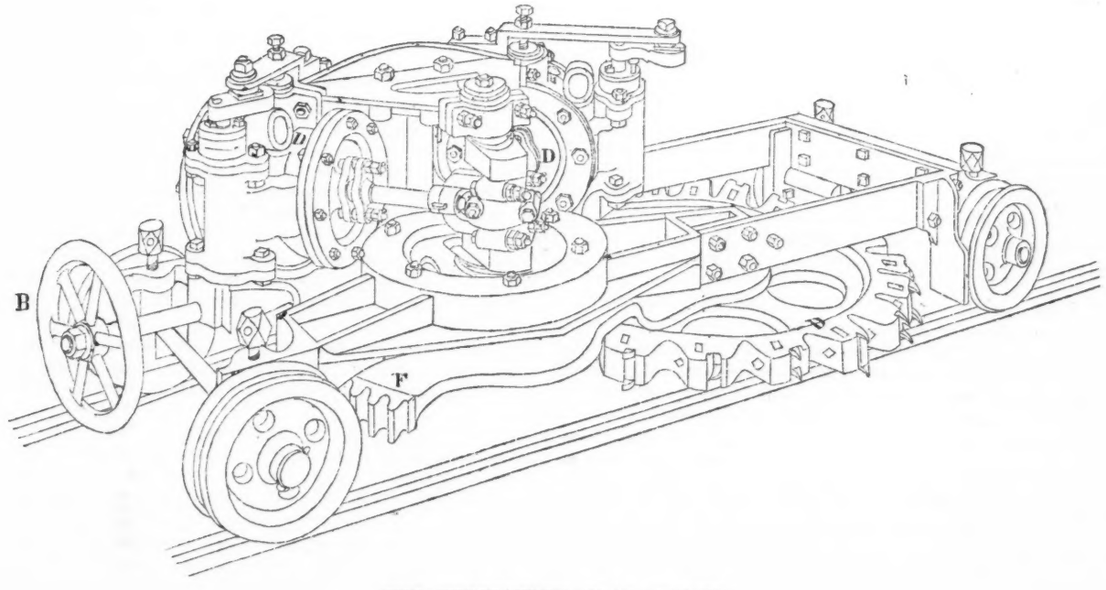
The inventor states that the pressure in the air necessary to work this machine is 20 to 30 lb. The weight of this coal cutter is about 15 cwt., and it may be made to run on a track of any gauge. The groove cut is about 3 inches high, and 2¾ to 3½ feet deep. The small coal produced is only 25 to 30 per cent. of that made in hand mining.

The work accomplished is claimed to be 75 feet of a cut in an hour, with 30 lb. pressure; this is said to be the work of at least 30 miners in the same time. The machine has been in use for about four years at the Plat Lane mine, in Lancashire, where the owner states that the coal seams 28 to 30 inches in thickness would not pay to work by hand labor.

The cutting disc runs much faster than GILLOT & COPLEY'S, making 25 revolutions a minute. This appears to be a move in the right direction.

The accompanying cuts show the machine in several positions, and the details of the cutting disc, teeth, &c., and need no further explanation.





THE WINSTANLEY COAL CUTTER.

A Heavy Casting.—One of the largest castings ever made in New York, has just been turned out (May 22,) from the Morgan Iron Works (JOHN ROACH & SON) after nearly two months of careful preparation. It was the cylinder for the new machinery in the Chicago Water Works The cylinder, whose outer surface is square, is 7 feet across at the top, 17 feet deep, and has a base of 48 inches The mould in which it was cast was construsted within range of two enormous cranes, and near it, upon a solid platform, was a ladle or tank capable of holding twelve tons of molten iron. Suspended from each of the cranes was a ladle containing eight tons of metal—the three ladles holding an aggregate of twenty-eight tons. The iron to fill these large vessels was carried from the cupolas in small ladles, the process consuming two hours or more. At 4 P. M. Mr. Gaynor, the foreman, gave the order to pour the iron into the mould, and three streams of fire leaped forth simultaneously from the three large ladles. In less than five minutes the twenty-eight tons of liquid iron, boiling and seething, and sending aloft myriads of small stars, were transferred into the mould, and the casting was known to be successful. Three rousing cheers from the workingmen greeted the result. It will require seven days to cool the casting.

Steel Bells.—Steel has of late years been employed occasionally for bells, and we learn, from the German *Elberfelder Zeitung*, that three cast-steel bells which fell at the burning of the church of the German Reformed community at St. Petersburg, have again been hung, and are found to be none the worse of several hours' endurance of a furnace-like heat. One of these bells, which was cast at the Bochumer Verein's factory, has historic antecedents. It was presented to the St. Petersburg community after the invasion of Denmark by Prussia; and now that it has been again hung, it is proposed to change its name from King William, which it formerly bore, to that of Emperor William.

THE ENGINEERING AND MINING JOURNAL.

NEW YORK, SATURDAY, JUNE 5, 1875.

RICHARD P. ROTHWELL, C. E., M. E.,
ROSSITER W. RAYMOND, Ph. D., } Editors.

NOTE.— Communications relative to the editorial management should be addressed to Mr. ROTHWELL. The articles written by Mr. RAYMOND will be signed with a star.

The Engineering and Mining Journal is devoted to Mining, Metallurgy, and Engineering. Communications on these subjects will always be welcome.

It is the only paper officially authorized to pub'ish the proceedings, transactions, and bulletins, of the American Institute of Mining Engineers, including all the valuable papers read before that influential society.

Correspondence and general communications and books for review should be addressed to Mr. ROTHWELL. Business communications should be addressed to the Secretary.

Remittances should always be made by Post-Office Orders or Bank Drafts, made payble to WM. VENTZ, Secretary.

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The Strikes.

OUR reports from the mining regions are somewhat contradictory. From Mahanoy and other parts of Schuylkill County we hear that a large number of the men have accepted the companies' terms and gone to work, while still later advices report a raid on these by strikers from Hazleton ; for further particulars we refer to our trade reports. At Summit Hill, the Lehigh and Wilkes-Barre Company's men held a meeting, in which a number of Hazleton men took part, on the 29th, and they expressed a strong determination not to yield, the Hazleton men promising a speedy victory, and, what was more to the point, a car load of flour.

There is much suffering among the men in the Mauch Chunk district, and particularly among the Irish and the breaker hands. The Welsh, a more thrifty class, are better off and can doubtless still hold out.

There was a current impression that about the first of June there would have been a pretty general resumption of work, but the first has come and gone, and the line is yet scarcely broken; it is, nevertheless, very evident that the men must eventually give in, and the longer they stand out, the more they lose beyond recovery. On the other hand, the companies now working are fully supplying the market, and there is no possibility of a coal famine, while the companies now idle will have to fill up their quota in the remaining six months, with high prices and low cost to recoup the losses they are now sustaining.

The curses of the men will surely fall on their leaders for the useless sacrifices they have been induced to make during these long, weary months. Few have any idea of the suffering the strike has imposed on many thousands of the best class of our miners ; the women and children, particularly, are in a condition that would move the hardest heart to pity, and yet their husbands and brothers *dare not go to work.* If a strictly secret ballot could be taken, we believe nine-tenths of the men on strike to-day would accept the terms offered; but, as we have many times heard them say, "it is as much as our lives are worth to go to work." A few roughs and worthless fellows exercise a brutal tyranny over their more industrious and peaceable comrades, and, as their influence over their fellow-workmen is increased by the violence of their actions and counsels, we cannot look for much reason or judgment from that source.

There is an evident weakening among the men, and we may expect any day to see a general break from the control of these short-sighted leaders, and when the men "screw their courage up to the sticking point" of asserting fearlessly the right of each man to his own labor, and to work when, and at what wages, seems good to him, without let or hindrance from others, there will be little delay in reopening the mines.

As we have many times shown, the wages offered are higher than can be earned elsewhere, and this is still further proved by the fact that comparatively few men have thus far left the coal regions. With the general depression which hangs over the business of the country and shows as yet but little indication of improvement, it needs no argument to convince every thinking man that wages must come down with everything else, and that no class of men can successfully oppose this inevitable settling-down to a lower basis. Wise are they who appreciating this fact seek, by steady work and strict economy, to keep their net earnings up to the standard of more prosperous times, and foolish are they who waste their substance, and bring untold suffering on their families, by following the wild counsel that claims our anthracite miners' wages to be an exception to the law which applies to every other class of labor, not in this country only but throughout all Europe as well. Everywhere wages, and with wages, every product of industry, is settling down to a lower basis of value, and we doubt if the bottom has yet been reached in many items.

The Dover Meeting.

THE late President of the American Institute of Mining Engineers was more cunning than wise, when, on the eve of his departure for the meeting at Dover, he handed to the printer a neat little parragraph about the rainy weather, with the direction to print it at the end of the report of his address, unless the storm should clear away before Tuesday night, in which case the paragraph was to be suppressed. Such clever calculations are apt to return and plague their inventors; and, in this case, the printer swears it was rainy in New York, while the President and a goodly number of members and associates are positively certain that Tuesday night was beautifully clear at Dover! Such are the materials over which future historians will scratch their bald pates unavailingly! Following the example of the metropolitan press, we shall decline, as editor, to make any retraction. So far as the late President is concerned, he must get out of the scrape as best he may; it is no concern of ours. Henceforward we shoulder the editorial responsibility alone.

There is, at all events, no difference of opinion, even in the newspapers, about the enjoyable nature of the Dover meeting. The locality was happily chosen; the attendance was large, and steadily maintained to the last; the proceedings were interesting, and the excursions, thanks to the coöperative exertions of Nature, the local committee and many hospitable citizens and public-spirited corporations, were occasions of pleasure unmarred. The election of officers ended in the triumph of the ticket recommended a few weeks ago in our columns. Whether the struggle was a severe one, who can tell? The close-mouthed Scrutineers (a barbarous name for an excellent function!) reveal nothing but the final result; and the ballots have been destroyed according to law. But rumors will arise, and the uncontradicted rumor in this instance is, that the vote was both large and practically unanimous. The universal satisfaction over the election of Mr. HOLLEY rose to enthusiasm when he acknowledged the honor in a graceful off-hand speech, which proved at once his genuine modesty and perfect capacity.

A pleasant feature of the meeting was the presence of Professors COOK and SMOCK, and the papers they presented, by which the members were enabled to obtain in advance a clear notion of the geological structure and vein-phenomena of the localities visited in the excursions. Both the interest and the profit of the latter were greatly enhanced by this means, and we trust that in future meetings the precedent will be followed. It would be a good thing if, before visiting any mine or metallurgical establishment, the Institute could listen at leisure to a full account of it from competent authority.

While the attendance at this meeting was numerically not inferior to any that have preceded it, and included a large proportion of those active members, whose faces emerging from the railway-cars, or whose names upon the hotel-register, are always greeted with congratulations as ensuring a successful session, yet there were among the absent ones some, whose failure to appear gave rise to oft-repeated condolence over our loss—and theirs. Father THOMAS was heartily missed; and so were COXE, CORYELL, HUNT, FRAZIER, ALEXANDER, SYMONS, FRAZER, FRITZ, and others, who have added so much in times past to the social pleasure of these occasions, that when they do not come we all feel wronged. But there is much savage consolation, when one is in pain, in the thought that others suffer likewise; and we do not doubt that our friends felt as keenly as we did the deprivation inflicted upon them by the inexorable dictates of other duties. He who has never attended a meeting of the Institute may bear with equanimity the loss he cannot fully estimate; but, after once tasting the refreshing cordial, he cannot be philosophically indifferent, or quench his thirst as well with other draughts, when the cup is filled for him again.

A number of members—some newly elected, others elected long ago, but hitherto held in bondage under the delusion that they could get the benefits of the connection as well by reading the proceedings as by personal participation in them—underwent last week the experience above described. It was amusing to the veterans to hear their frequent expressions of *naïve* surprise that things were so very jolly, and their vows that so long as they lived they would never miss another meeting. And it must be confessed that even the veterans, familiar already with the happy, informal ease, the keen, good-natured repartee, the release from business cares, the boyish enjoyment, untainted with vulgarity or dissipation, which characterize the meetings of the Institute, could not but acknowledge that the Dover meeting worthily crowned the series. What is going to become of us, if we go on in this way—each meeting better than the last? Epithets failed long ago ; human capacity for enjoyment has its limits. It is high time for something discouraging to happen—yet there is no sign of it. The auspices were never more favorable. The membership of the Institute has increased to over 450, and continues to grow rapidly. Its publications command attention and applause in this country and in Europe. In a recent letter to the Secretary, acknowledging the receipt of our second volume of

Transactions, one of the most eminent English authorities expressed his regret that in that country there appears no publication of equal value. So long as the meetings of the Institute bear such blossoms of immediate pleasure and such fruit of subsequent profit, there is no reason to fear that it will falter or retrace its steps of progress—except the vague apprehensions which human nature sometimes feels, when a course of unbroken success seems "too good to last."

The resources of the Institute are in itself. A company of its members will be sure of a lively and useful meeting anywhere and under all circumstances. But outside influences do count for something; and when, as at Dover, spring skies are fair, and friends are many and cordial, everybody becomes doubly genial and brilliantly flashes, or gently glows in measureless content.

We began this article with the intention of describing the excursions of the Institute, but our pen, quite conscious of the difficulty of assailing that subject, has been careering round and round it, like Cossack cavalry about a hollow square of bristling bayonets. There is only one way—we must jump into the middle, or die in the attempt. And this will we do—life and strength and time permitting—but the leap lands us in the middle, not only of the subject, but of next week as well. By that time we shall have regained breath, so that we shall be able (brandishing in one hand the weapon which is mightier than the sword, and in the other the ink-horn, more potent than any bugle of war, while over us waives the invincible banner, formed of a magnificent, illustrated, supplemented ENGINEERING AND MINING JOURNAL) to go in valiantly and do "our level best." *

McAndrew and the Judges—Give Honor Where Honor is Due.

"THINGS are never so bad but they might be worse," is one of those consoling proverbs we are apt to repeat, rather for the benefit of our neighbors than ourselves. But we have recently had occasion to acknowledge its application in a matter of some interest to our readers. All, doubtless, remember MCANDREW, the marvellous Clerk of the Schuylkill District, whose triumphs in the domain of science, literature and art we have endeavored, from year to year, to commemorate fittingly. Sceptical persons supposed we were ridiculing this shining light of Schuykill County, but not so the great and good men forming the Court which recently made the appointment of a successor to MCANDREW, whose term of office had expired. With the simple faith of little children they drank in the wisdom of MCANDREW, and recognized in our panegyric a just tribute to the brilliant genius that could analyse the gas of a mine by means of a barometer, or square the circle, with equal ease. With the fine instinct of kindred these gentlemen quickly discovered the real nature of genius, though, perhaps, concealed under borrowed disguise, as the farmer of old, according to ÆSOP, recognized the lion under the ass' skin—perphaps it's the other way; but we can't stop now to hunt up authorities.

The Court of Schuylkill County has immortalized itself, it has appointed MCANDREW to succeed MCANDREW!! and we hasten to congratulate the Court, the county and the scientific world, on this official recognition of merit and genius. We always thought Schuylkill County would be true to its glorious traditions, and maintain the well-earned preëminence it has attained in the high tone of its journalistic ethics, the value of its coal statistics, or the transcendent genius displayed in its mine inspection reports. Yet, alas for human weakness! with what anxiety we watched the proceedings of that court, lest, perchance, in these days of partisanship, trickery, and political intrigue, some of the judges might have heeded the too bold criticisms of MCANDREW's great work, or might have been influenced by other considerations than the eminent qualifications of the man for the place! Unnecessary anxiety—our faith in the innate spirit of appreciation by which men are irresistibly attracted by like qualities in their fellow men; and our knowledge of the æsthetic culture and impregnable impartiality of Pennsylvania Judges should have allayed such groundless fears. Henceforth the faith that can remove mountains shall be feeble as compared with the confidence we shall place in these great souls, yea, even though it has been intimated that the President Judge, CYRUS L. PERSHING, opposed this appointment—actually voted against it, some say! However, as he has not made public his protest, charity commands us to give him some share in the honor which belongs to his Court.

In the future, when we peruse, and delight our readers with the latest mathematical conundrums, the exquisite, sparkling brilliancy of expression, and the far-reaching profundity of thought and learning that distinguish this department of Pennsylvania official literature, and while acknowledging the genius that alone could indite it, we shall not be unmindful of the fact that we owe this national honor to President Judge CYRUS L. PERSHING, to the Law-Assistant Judges WALKER and GREEN, and to the Lay-Associate Judges, KLEINE and SEITZINGER, who, as a Court, made the appointment, and to such patriotic coal-mining firms as HECKSCHER & Co., MOODIE, GROSS & Co., and others, who joined in recommending the reappointment of MCANDREW.

But there is always a shadow over every human happiness, and our great satisfaction at this appointment is dimmed by the bare possibility of there being some foundation for the following invidious statement: "It was stated to the Board of Judges, that MCANDREW would in the future give up his foolish attempts at authorship, and confine himself to his legitimate duties." Ah! foolish as well as invidious correspondent! You can't shut up MCANDREW in that way, you don't know the man. We, too, thought, some years ago, before we came to a full appreciation of this rare genius, that the sneers of an inappreciative and incredulous press would have chilled into silence the sensitive soul of the great man. Not so! not so! Genius cannot be bound in bonds like these, and even should his future volumes contain fewer of those brilliant flights of the imagination, that are characteristic of great ability, yet "it is not as bad as it might be," for we can be sure his own peculiar style of manipulating figures and difficult mathematical discussions, will still give a never-fading charm to these official State Reports,

CORRESPONDENCE.

The Value of Black Band Ore.

CHARLESTON, WEST VA., May 25, 1875.

TO THE EDITOR: SIR—Of late there has been a great deal said and written about Black Band Iron Ore. Here in Charleston, and in South-eastern Ohio, it is a common thing to meet men with chunks of coal slate in their possession, calling it Black Band iron ore, and thinking they have found a fortune; they think that Black Band is the most valuable of all the iron ores in the world; that in Scotland certain parties sold their land, having this kind of material upon it, for some fabulous price, &c., &c., and, of course, self-interest impels them to assert that this material is the same as the Scotch iron ore.

There is a great difference between Scotch Black Band and other Black Bands. I have examined the Airdrie Black Band, the Carnbroe Black Band—indeed all the Bands found in Lanarkshire, Scotland. I have also done the same at Staffordshire, England, and Monmouthshire and Glamorganshire, South Wales, also the McGuiness Black Band, St. Clair, Pa. Scotch Black Band ore yields from 35 to 43 per cent. metallic iron, and but a small percentage of phosphorus and sulphur, with a liberal supply of carbon. English Black Band is poor in metallic iron and carbon, but rich in such elements as phosphorus and sulphur, therefore, strictly speaking, valueless. Welsh Black Band is poor in metallic iron, some of it taking five tons raw to make a ton of iron, the ore in some instances, such as the *Pont-y-pool* and *Lancaich*, (see Percy's Metallurgy, pages 221, 222 and 234,) containing over 16 per cent. silica, and 1.21 per cent. phosphoric acid, and the same amount of sulphuric acid.

This is the iron ore from which Welsh ironmasters make what used to be termed "American rails." They were made to sell cheap, therefore would suit our railroad financiers who are cent-wise and dollar-foolish. I have seen scores of such rails break into three or four pieces, of a cold, frosty morning, when thrown into the cars to be loaded at the rail mills in South Wales.

I know of works in South Wales that get this Black Band for less than 2s., say, fifty cents, per ton. The iron made from it cannot be used for small iron such as bolts, flats, &c.; it can only be used on the head of the rail where crystallized iron is needed.

English, French, and other European railroad engineers, in their specifications, prohibit the use of Black Band iron, in any shape or form, in the pile from which their rails are made.

Scotch Black Band is used in the furnace for making pig iron for foundry purposes, because the pig iron will contain a large amount of carbon and phosphorus, such elements making it a very fluid, though weak, iron; but when they make pig iron to be converted into bars they have to use iron stone and the Lancashire red iron ore—so the managers at Gartsherrie, Summerlee, Govan, and other works near Glasgow, told me, when asked about it. The McGuiness Black Band found in the North American shaft, near St. Clair, Pa., in 1866-7, was a much better article than the English or Welsh Black Band, and the analysis of Prof. BOOTH will show it contained but a very small percentage of phosphorus or sulphur, while its percentage of metallic iron was over 41 per cent.; this ore helps the working of the furnaces in admixture with such iron ores as are used at St. Clair and Pottsville; it was never tried alone in the furnace—therefore we cannot say what kind of iron it would make.

At Massilon and Canal Dover, Ohio, Black Band iron ore is reduced into pig iron. I have seen the pig iron produced, but would say that it does not look like Scotch pig, it looks more like Welsh Black Band pig iron.

I will, in my next, give the analysis of the various Black Band iron ores, so that your readers may judge of the value of the different ores. I will also give you the position, &c., of the Black Band found here on Davis' Creek, and above, &c.

MARCUS BRUTUS.

On the Occurrence of Native Brass.

IN the spring of 1874, I received from WM. ROBERTS, Esq., Engineer of the Copper Falls Mine, Keweenaw, Mich., a few small rounded pieces of a heavy yellow metal, which had been found in the stamps. From the constant occurrence of native silver, under the same circumstances, it seemed at first not altogether improbable that the specimens were gold—though to my knowledge no gold has ever been found with the native copper and silver of the Lake Superior region. On analysis, they proved to be an alloy of copper and zinc. I informed Mr. ROBERTS of the result, remarking that their presence in the stamp ore was without doubt accidental, and that they had come from the breaking of some of the brass parts of the machinery, or some other foreign source. At the expiration of a year I received the following interesting reply:

COPPER FALLS MINE, May 4, 1875.

DEAR SIR—Your favor of April 22, 1874, came duly to hand. I have been waiting patiently for the time to come when I could gather a few pieces more of this yellow metal together for your further consideration, as per your request. On the receipt of your letter I gave our copper dresser instructions to keep a watchful eye for those particles of yellow metal. Inclosed is the amount collected during the past year, together with a few pieces of silver, copper, silver and copper, and silver rock, so that you may see the nature of the stamp mineral produced from our copper bearing belt. Furthermore, there is no possi-

ble chance of brass getting into the stamps from the stamping or washing machinery, as all its parts consist of iron, with Babbitt boxes, except a few small connections, which are beyond the point where this metal is found. It is found among the coarse copper after being taken out of the mortar. We are using the Burleigh rock drills, which is the only possible chance I can see whereby particles of brass may be produced, and then only from the breaking of the piston rings or stopcocks. I have taken particular pains to examine each machine when presented for repairs, also on their going out of the shop to see that there be no defective parts left unnoticed, and have not seen a broken ring or stopcock during the past year.

Yours, respectfully,

WM. ROBERTS, JR.,
Engineer Copper Falls Mine, Keweenaw Co., Mich.

All the specimens of brass spoken of above are flattened lumps, the largest weighing 4 grammes and nearly 2 centimeters in diameter. They are readily flattened out into thin foil, working rather toughly, and cracking on the edges only when much hammered. Somewhat less fusible than brass wire of same weight. In color not distinguishable from a specimen of cast brass, which had a specific gravity of 8.1 and which was found to contain 72.5 per cent. of copper and 27.5 per cent. of zinc, with a bright yellow color. The brass from the Copper Falls Mine is composed of 69.98 per cent. copper, 30 per cent. of zinc and a trace of iron.

So far as its chemical constitution is concerned, it may be regarded as identical with ordinary brass. Its specific gravity is 8.5, or, according to another determination corrected for temperature, 8.49. This is higher than the specific gravity of rolled brass, which is 8.4. Its greater density is not due to an unusually large percentage of copper, as is shown by the analysis. It may possibly have been influenced by the great pressure connected with the operation of stamping.

To the question, whether the occurrence of native brass is probable, a negative answer must be given. In the first place, neither the ores of zinc or native zinc have been found in the cupriferous rocks of Lake Superior. The occurrence of native zinc in the few localities, from which it has been reported, is extremely doubtful. Some is stated by G. ULRICH to have been found in a geode in basalt, near Melbourne, Australia, and by L. BECKER, in the gold sands of the Mittamitta river, north of Melbourne. (Quoted in DANA'S Mineralogy, 5th Ed.) A striking feature of the native copper of Lake Superior is its exceeding purity, being remarkably free from foreign substances. Even granting that the analyses hitherto made have been executed with homogeneous material, and that the minute amounts of silver, mercury and lead (no zinc) which have been detected, have not existed as separate mineral particles, yet the native copper never affords an alloy similar to that under present consideration. If we suppose that a salt of zinc could have undergone reduction at the same time with the salts of copper, and that the two reduced metals could have been brought together, and alloyed by some igneous disturbance connected with the origin of the trap dykes which protrude through the cupriferous rocks, yet the production of an alloy identical in composition with ordinary brass is a coincidence so exact, that the very coincidence destroys our belief in the native origin of the brass. Finally, if an examination of the mechanical and physical properties of the specimens had developed some peculiarities, or if the analysis had revealed an unusual composition, the finding of these specimens might have been allowed to go on record as an unexplained fact; but as it is, the probabilities are overwhelming against the assumption that they are native brass. Further search, and the exercise of every imaginable precaution against the possibility of foreign bodies finding their way into the stamp mineral, will be requisite to establish a fact so unprecedented. But if the interest displayed in the present instance was generally expressed by those having mining operations under their control, a vast multitude of facts now unnoticed would be preserved to science, and for this reason also, any observation made like the present with faithful care, should receive inquiry and examination, and not be dismissed by the scientist with a simple "non potest."

Stevens Institute, May 28th, 1875. ALBERT R. LEEDS.

Remarks on the Paper Read by Isaac Lowthian Bell, Esq., before the Iron and Steel Institute of Great Britain, at its Session of May, 1875.*

BY THOS. S. BLAIR.

IT was my purpose to offer to this meeting of the Mining Engineers, a paper supplementary to that which I had the honor to submit in February, 1874, at our meeting in the city of New York. I have been unable to complete some experiments which are necessary to present, in proper form, some of the topics I had in view, and I should have allowed the whole matter to lie over until a later meeting, but for the fact that the report of Mr. I. LOWTHIAN BELL'S visit to this country, submitted to the Iron and Steel Institute of Great Britain, at their last meeting (London, May 6, 1875), contains some statements respecting my process which I desire to remark upon, while yet fresh in the minds of the American public.

Mr. BELL'S authority in all that relates to iron metallurgy is so weighty, that no one can afford to pass it over lightly, and inasmuch as he has done me the honor to give my process a prominent place in his paper, I feel that I am not trespassing unduly upon your time in supplying (what I apprehend to be) important omissions.

But, once for all, I wish to remind you that when a man of Mr. BELL'S breadth of grasp is brought—for a period of time so brief as the term of his visit—face to face with such a deluge of new facts for observation as this new country presents, it would be absurd to expect that all should be retained, with due ratio of importance, in his memory. If, therefore, I venture to supply some data which were submitted to his attention, but which have been overlooked in his comments, it is with no desire to impute to him any more than that measure of human fallibility which is the inheritance of the greatest minds.

The question of yield naturally looms up as of chief importance, just so soon as it becomes certain that iron sponge can be obtained. When TUNNER'S attention was called to the paper read by me at your New York meeting, he gave in his adhesion to the feasibility of producing the sponge, but reserved his verdict upon the value of my process until he should learn as to the extent of loss by re-oxidation, in the after-treatment. Such, in fact, has been the usual experience, when presenting my system, for the first time, to well instructed metallurgical chemists. Such was, apparently, the chief anxiety in Mr. BELL'S mind, when visiting the Glenwood Works, after having satisfied his curiosity as to the plant, seen then for the first time.

In fact, this is, after all, the paramount question, overshadowing every other, just so soon as the initial fact is established: to wit, that the reduction of the oxide can be effected, at a red heat, with one-third of a ton of carbon for every ton of iron produced. This initial fact, as I term it, is that *a certain kind* of wrought iron can be produced at a less cost than pig iron. Upon the heels of that, follows the question—Is that kind of wrought iron available for manufacturing purposes? Once that the question of *quality* is set at rest, comes the final and crucial question—How much does it waste in the operation?

Recognizing this, therefore, as an essential factor in the estimate of the value of my process, we were anxious to have Mr. BELL'S opinion on that, as upon all the other features of my process, and the "melting-book" was placed in his hands, from which he made some extracts, and from the same book an abstract or tabulated statement of a certain run of charges was prepared and given to him. This "melting book" devotes one page to each cast, registering the weights of the different constituents of every charge put in, with the time of charging, the yield, etc.

The series of casts above referred to showed a product of 589,070 lb. steel, in which the pig iron was 33.2-10 per cent. of the whole charge, and the waste was $14\frac{96}{100}$ per cent. of the amount of metal charged.

Mr. BELL passed the day at our works on Saturday, October 24, 1874, on which day the cast was No. 159. It contained 1,335 lb. pig iron in 6,930 lb., total; being 19 3-10 per cent. This was in a 3 ton furnace.

Running back from that cast, to make a group of 10 consecutive casts altogether, the ratio of pig charged was as follows:

	Lb. pig.	Lb. total.
Cast No. 159	1,335	6,930
" 158	1,560	6,701
" 157	1,572	7,092
" 156	1,492	5,740
" 155	2,065	7,199
" 154	1,520	6,790
" 153	1,510	6,999
" 152	2,169	7,301
" 151	2,025	6,330
" 150	1,955	7,277
Total.....	17,203	68,359

The ratio of pig to total is 25.17 per cent.

No casts of 2 parts pig to 1 part sponge have ever been made, and we have no data whatever on which to found anything more than a conjecture as to what the loss might be in such a case.

Mr. BELL'S language is this:

"So far as I was able to learn, two parts of pig iron and one of sponge lost about 20 per cent. in the furnace." From what I have stated, it will be seen that Mr. BELL had, in some way, got his notes in disorder. I do not remember of any other data furnished by us to Mr. BELL as to open-hearth yields, except a statement of a trial lot made with pig iron, charcoal-blooms and scrap, in which the waste was over 18 per cent. It is probable that Mr. BELL'S mind, in writing this portion of his paper, reverted to the theory of the operation, rather than to the practice of it, as witnessed by him.

He says, "The difficulty which besets this and all other modifications of dealing with iron in so fine a state of division as it exists in the sponge, is its proneness to sub-division. Hitherto, it seems to me the direct process, as it is termed, has met with the most success in Landore. The pig iron, after being melted, has blocks of ore thrown in; the carbon and silica of the bath reduce the oxide, and the metallic iron is instantly taken up by the bath of liquid metal. Very different must be the action on the sponge, which when thrown into the furnace, will float on the melted pig, and being exposed to carbonic acid at a very high temperature, will, to some extent, infallibly be reconverted into oxide."

Mr. BELL observed, with much interest, the melting of the sponge in the bath, thrown in, as it was, with a shovel, and sinking into the comparatively light cinder.

I should have preferred to call Mr. BELL'S attention to these matters before bringing them before you, but the time of the present meeting forbade it. I hope to have the pleasure of reporting to you on this subject, however, at a future meeting, and to be fortified, at all points, with the approval of Mr. BELL, who has promised to make a working test of my process under his own direction, and whose final adhesion to the system I should hail as the greatest triumph it can achieve.

DISCUSSION.

Mr. HOLLEY said that he believed Mr. BLAIR'S statement to be correct. He (Mr. HOLLEY) had frequently examined the record referred to, and was convinced that the loss is not greater than stated by Mr. BLAIR. There is no doubt about the instant sinking of the sponge into the bath—at least into the slag, where it is protected from oxidation. Loose sponge will sink as readily as compressed sponge blooms. The latter are now used by Mr. BLAIR, because they can be pre-heated in an auxiliary furnace, without much oxidation, and will then melt very rapidly in the bath. Loose sponge cannot be treated in the auxiliary without much oxidation. It may be used cold perfectly well, only its melting requires more time.

The question had been asked by several members—why had not BLAIR'S process been more extensively introduced? The answer is—and it should be satisfactory—that Mr. BLAIR'S only delay and embarrassment has been due to a bad open-hearth furnace—to a part of the plant entirely independent of his own patented and novel process and machinery. There is no difficulty nor irregularity in the true sponge manufacture. Mr. BLAIR was at the start forbidden to use the Siemens furnace, and was thus compelled to use some undeveloped furnace. As the Sellers-Gorman continuous regenerator was working well at the time, and as the Ponsard system was said to be successful, the similar but simpler Frank continuous regenerator was taken up by Mr. BLAIR, as more likely than any other to answer his purpose. But it did not work well or regularly, although many tons of good steel were melted by means of it. Meanwhile the case was represented to Mr. SIEMENS by the speaker, and as a result, Mr. BLAIR was offered a license to erect a Siemens furnace, which he immediately did. He is now producing uniform steel, in consequence of having uniform and sufficient heat. No doubt the Frank furnace or some continuous regenerator will be successfully developed.

Prof. EGLESTON said that he was very glad to hear this explanation of the delay in the development he had confidently looked for, of the Blair process. He considered the process, scientifically, a great improvement upon previous direct processes, and he should be glad to assure Prof. TUNNER, and other foreign experts who had repeatedly inquired of him concerning it, that it had not failed practically. The instant sinking of the sponge into the bath seemed perfectly to account for the small oxidation and loss.

* Proceedings of the Dover Meeting of the American Institute of Mining Engineers.

Mr. H. M. HOWE said that he was glad to be able to confirm Mr. HOLLEY's statements in every particular. He (Mr. HOWE) had at one time superintended the works of Mr. BLAIR. The oxidation was low, because the sponge, both loose and compressed, sank instantly in the bath. There was no difficulty about making uniform sponge. The only difficulty had been with the Frank Furnace.

President RAYMOND remarked that Mr. BELL had said more than Mr. BLAIR had quoted, the tendency of which was favorable to the direct process. The President then read as follows from Mr. BELL's address:

"The specimens of steel I had an opportunity of examining indicate entire success so far as a mere question of quality in the product is concerned. There seems to be no doubt that in obtaining the sponge iron, Mr. BLAIR has made a notable step in advance of Mr. CHENOT, and I am far from wishing to be understood as expressing an unfavorable opinion on the future commercial merits of the scheme."

Rotary Puddling.

ADDRESS OF MR. MENELAUS AT THE MEETING OF THE IRON AND STEEL INSTITUTE OF GREAT BRITAIN.

FOR the conversion of pig into wrought iron, the rotary puddling machine, in one or other of its forms, has occupied the attention of iron makers for many years, and various attempts have been made, from time to time, to perfect the machine. When, under the auspices of this Institute, the Danks machine was introduced into this country, success seemed certain; several machines were erected, mostly at and near Middlesborough, but they seem to have failed, chiefly from defects in mechanical construction. These defects have, I am told, been rectified, and several important improvements have been made in the construction and mode of working the machines. To Messrs. HOPKINS, GILKES & Co. is due the credit of having first introduced and practically tested these machines in England. The Erimus Company followed, and erected extensive works, in which the Danks machines alone are used. Certain difficulties were met with, and, no doubt, for a time some disappointment was felt; how these difficulties were met and overcome is fully explained in an interesting communication from Mr. JOHN A. JONES, which I will read.

"NARRATIVE OF ROTARY PUDDLING.

"A year ago the writer stated, in London, what were at that time considered to be the chief drawbacks to the success of rotary puddling. They were stated to be the education of the men and the removal of prejudice from amongst them; the difficulty with the fettling of the furnace, and the mechanical weakness of the Danks machine. It was quite evident that unless the company could procure a certain quantity of iron from each machine in a given time and in a regular manner, rotary puddling could not favorably compete with hand puddling, so far as the cost of puddled iron was concerned. The obstacles were in chief as stated above, and to the removal of these the company devoted their attention. The education of the men, which includes the change from a positive state of indifference to that of active assistance, has given more trouble and anxiety than was anticipated; and to this day we have not received that active co-operation from the men which is necessary to the complete success of rotary puddling. At the same time much progress has been made in that direction, and it is earnestly hoped that, in a short period, we shall receive that assistance which will enable us to do better than has hitherto been done.

"The fettling of the furnace, and the materials used for the same, are no longer questions of difficulty, and in this respect we have no drawback. We line the furnace after each heat with best tap, pottery mine, purple ore, and Spanish ore; suitable proportions are mixed in a grinding mill, and then used in the furnaces. Fettling can be procured suitable to any district where the difference in the quality of the pig iron mostly necessitates a variation in the fettling ingredients.

"With regard to the mechanical imperfections of the Danks machines, they have been of a serious character. The repairs have been very costly, and the loss of output, by reason of frequent stoppages, has affected the cost of production most unfavorably. It became apparent that unless the mechanical construction of the furnace was such as to ensure regularity of work, it was hopeless to expect satisfactory results, and the attention of the directors was devoted to this necessity. It was at last agreed that new furnaces of a different construction should be adopted, and to that end one was erected as an experimental furnace. This furnace has been at work for nearly two months. It is a double-cased wrought iron furnace, hooped with steel, and is water-jacketed. There is a constant flow of water to and from the water space, and the water at the outlet pipe is kept at from 80 deg. to 100 deg. Fah.; in fact, perfectly cool.

"This double-cased furnacehas maintained its mechanical accuracy, which it is almost impossible that a single-cased furnace can do, owing to the effects of expansion and contraction. The firing of the new furnace is done in the usual manner. It will not be necessary for me to describe in detail the improvements of this machine; let it suffice that it has been designed and constructed after all the weak points of its forerunner have been carefully considered. The directors are so satisfied with the work done by this machine, that they have ordered five more, and six new sets of engines to drive them. In designing the engines the same amount of care has been taken. They are overhead double-cylinder engines; the wearing parts have been carefully examined, and nothing in strength or in the detail is left unprovided for, so as to assure continuous and satisfactory working.

"MODE OF MANUFACTURING PUDDLED BARS AT THE ERIMUS IRONWORKS.

"The pig iron is first melted and refined in one of THOMAS's cupolas. The refining is done during the smelting process, and is accomplished by simply mixing scrap iron and ore in the charges. The perceptible effect it has upon the iron is that where the charge is exclusively of No. 4 forge gray pig, the fracture becomes that of white or refined iron. The chemical effect is that a portion of the silicon and phosphorus is removed, and it is to this end that the refining is done, so that there will be as little action as possible upon the lining of the furnace.

"The effect of using refined iron is very marked. We do not perceive any melting out of fettling *per se*; but what is used is reduced, and thus adds to the yield. Again, the refining of the iron does not necessitate the fettling of the furnace so often, whereby much economy is effected in the fettling used, and in the time which is devoted to puddling.

"We charge entirely with melted and refined iron, and the weight of our present charge is 14 cwt., which, when the new furnaces are erected, will be increased to a ton.

"The Cleveland forge iron, which is almost exclusively made from a foundry burden, is very silicious. It holds from 2 to 3 per cent. of silicon. It is obvious, therefore, what an evil effect this pig has upon the fettling; and a portion of this is removed, as is stated, by refining. In Cleveland scarcely any gray forge is made from a forge burden, but it is derived from an attempt at foundry iron, and the finished-iron maker suffers severely from this.

"No heat takes more than thirty-five minutes to puddle. The heat is removed in a single ball, and squeezed or shaped into a piece about 4 feet long by 15 inches diameter. It is then cut up at the same heat, and taken to reheating furnaces, where it is reheated, hammered, and rolled into bars. The Erimus Company are now making angles, bulbs, bars and tees, with no other iron than Cleveland.

"Three relays of men are employed at the machines, and work eight-hour shifts.

"It is expected that each furnace will work six heats in the eight hours, and this is regularly done unless some breakdown or accident interferes; and with the old machines those break downs are, unfortunately, only too frequent. At the present time the company are working six furnaces, and they average nearly 300 tons per week of puddled bar, thus giving an output of 50 tons per furnace per week. The present consumption of coal is for actual puddling 9½ cwt. to the ton of bars. Of fettling (half bought and half from first heating or mill furnaces) 9 cwt. to the ton of bars. The yield of bar from pig is 20 cwt. of pig to 20 cwt. of bars. The whole quantity of coal used to the ton of bars, including reheating, is under 20 cwt. The price we pay the puddlers is at present 3s. 2 4-10d. per ton long weight, they paying their own underhands. The whole wages of every kind, including cupola-refining and reheating, is under 20s. per ton of bars.

"The question now arises—Are we satisfied with a production of 300 tons per week from six furnaces; and is there any prospect of increasing that quantity? The answer is—We are not satisfied; and there is every prospect of the quantity being increased to 500 tons per week from six furnaces. To this end new machines and engines are ordered, capable of taking 1 ton charges; and the tools are being remodelled to handle the heavier charges. The experiment of working a ton charge has frequently been made, and the time required for puddling never exceeds forty minutes. The number of heats will be the same as at present, viz., six in eight hours, and it is simply by the increase of the weight of the charge that the quantity will be raised from 300 to 500 tons. The actual puddling of the six heats will take up four hours, leaving the other four hours for fettling, repairing, cleaning grate-bars, etc.

"We find that it takes the same coal to puddle a ton as to puddle 14 cwt., and as the time consumed in charging, drawing, fettling, and squeezing will be the same as at present, it is obvious that the increase of the charge to a ton is the proper course. We have no doubt that we shall be able to bring the consumption of coal for puddling down to 7 cwt. to the ton of bars; and the whole of the coal consumed in the puddling department to 15 cwt., and we anticipate that the wages will not exceed 15s. on the ton of bars, which will include all labor charges in the puddling department.

"The new furnace at the Erimus Works, when worked experimentally, gives results much better than are stated here. The following figures give the average results of our working in a regular manner.

"THE ERIMUS IRONWORKS.

"*Make at Forge, four weeks ending March 27th*, 1875.

			Tons.	cwt.	qr.	lb.
Week ending 6th of March,	No. of furnaces, 5....		193	2	1	15
" " 13th "	No. of furnaces, 6....		282	7	1	5
" " 20th "	No. of furnaces, 6....		298	0	3	0
" " 27th "	No. of furnaces, 6....		275	5	2	10
			1,048	16	0	0

In thirty-six working days of twelve hours.

"*Coals consumed for Puddling alone, four weeks ending March 27th.*

		Tons.	cwt.	qr.	lb.
Week ending 6th March	.....	92	5	0	0
" " 13th "	.....	116	10	0	0
" " 20th "	.....	141	1	2	0
" " 27th "	.....	124	8	0	0
		474	4	2	0

	Cwt.	qr.	lb.
Coal to a ton of bars on puddling alone.....	9	0	6"

Mr. HEATH, with his usual enterprise, was one of the first to take up in earnest the Danks system of puddling. He informs me that he has had six Danks furnaces at work for some time, and has four additional furnaces ready for work. He is rolling from Danks blooms, in the ordinary forge rolls, 16-inch bars, 24 feet long. Mr. HEATH states that he is making these bars more cheaply than by the old puddling process, to say nothing of the saving in waste in cutting up long bars as compared with bars one-fourth the length.

Mr. CRAMPTON, who has made a long series of experiments on mechanical puddling, having been at work on the subject over five years, has produced some very excellent results as to quality of metal; and he assures me that his experimental machine at Woolwich is working very economically, and that it will bear the test of continuous work; to use his own language, "The furnace is fitted to stand the rough usage to which such a machine must be subjected in ordinary ironworks, and it involves a minimum of expense for wear and tear, and for general repairs." Mr. CRAMPTON, in a paper read at the meeting of the Institute, at Barrow, in September last, has so fully described his furnace and the various ingenious appliances connected therewith, that I need not take up the time of the meeting in going over well-beaten ground; Mr. CRAMPTON, having, in his very able paper, exhausted the subject. Several of Mr. CRAMPTON's furnaces are being erected at Middlesborough, where his plans will be thoroughly tested, probably before our next meeting. I am sure that every member of this Institute must wish Mr. CRAMPTON success. He has for a long period pursued the investigation of a very difficult subject, with unflagging zeal; and he has shown much practical knowledge and great mechanical skill in working out his plans.

Sir JOHN ALLEYNE has also worked at this mechanical problem. He is experimenting with the Simens Rotator, and also with a modification of MAUDSLEY's machine. Mr. REYNOLD ALLEYNE thus describes the latter machine as modified by his father:—"We are now working my father's machine with Siemens gas furnace, and also heated by direct combustion in the ordinary way. The machine consists of a pan, which rotates on a vertical axis, and the puddler, which is fixed over head, and which works the rabble to and fro at right angles to the front of the furnace. When the heat is ready to ball up the puddler is stopped, but the pan continues to revolve. The work of balling is done at the door, and it is never necessary to reach across the furnace. In the gas furnace we charge five heats of 6 cwt. per shift. The waste is 2¼ to 3 per cent. The

waste in the direct combustion furnace, with the same charges, is 10 per cent.; showing the advantage of using gas instead of solid fuel. The two furnaces are worked by one puddler each, and a boy to look after the machinery of both furnaces. Sir JOHN himself expresses an opinion in favor of the pan or 'soup plate,' as he calls it, heated by Siemens gas furnace."

At our annual general meeting in May, of last year, the Pernot furnace was described. This furnace is the revolving pan with the axis inclined, as invented by MAUDSLEY; but M. PERNOT has made an important improvement over MAUDSLEY'S furnace. He has mounted the revolving pan on a carriage on wheels, and it can be withdrawn from the puddling chamber for repairs.

Mr. SNELUS, who has just returned from a tour through the French works, informs me that he saw three Pernot puddling furnaces at work at Messrs. PETIN & GAUDET'S works. They were working one-ton charges of iron, mostly white, and each charge produced 18 cwt. of puddled bars. The fuel was slack coal, of which they used 14 cwt. to the ton of puddled bars. The pans are fettled with Mokta iron ore, about 2½ cwt. being used to the ton of iron made. Each furnace produces about four tons of puddled bars in twelve hours. Two puddlers at each furnace ball up the iron. Mr. SNELUS adds that the furnaces have been at work some time, and that they seemed in fair working condition.

I think that we may now fairly expect that mechanical puddling, in the hands of the many distinguished men who are now at work upon it, will soon be brought into successful operation, and, further, I think that it has been clearly demonstrated that the revolving puddling machine, of whatever type, if properly fettled and managed, produces far better results than hand puddling. By this method, iron of very excellent quality can be made from pigs containing a large quantity of phosphorus, and I think it not unlikely that the puddling machine will very soon enable us to use largely some of the commoner qualities of pig iron for making steel. In the manufacture of steel, we are making in England, by the Bessemer process alone, 10,000 tons per week, and the production is rapidly increasing. Various mechanical improvements have been made, which enable us to turn out larger quantities. In some cases as much as 1,000 tons per week has been made from a pair of converters. The Americans have set an excellent example in the many ingenious arrangements which they have introduced for getting a large amount of work out of a comparatively small plant. I believe that in this respect they stand at present unrivalled. In England we are following their lead, and we shall soon, I hope, be abreast of them.

When Mr. BESSEMER first designed his steel making plant, his idea was to run the iron direct from the blast-furnace into the converters. His first apparatus, on a large scale, was erected at Dowlais, where it was put down in front of a blast furnace, and the iron was run direct from the furnace. The experiment, for reasons quite independent of the mode of charging the converter, was not successful; nevertheless, we in England have ever since been content, for no sound reasons, I think, to melt down the pig iron at considerable cost, instead of running it straight from the furnace. In most cases in France, and in some other countries, the iron is run direct from the furnace, and I see in England no reason why we should not revert to Mr. BESSEMER'S original plan, and so save all the cost and waste of melting. Of course it will require careful management at the blast-furnaces; but with our pure fuel, excellent ores, and with a plentiful supply of pure foreign ores as a mixture, I see no difficulty in carrying out this economy in the production of Bessemer metal. Mr. BESSEMER informs me that, under his advice, in one of our leading steel works they are about to run the iron direct from the furnace; to use his own language, "They will use my process of further carburizing 20 tons of metal at a time in a hot vessel, mounted on wheels and running on rails to the converters; the metal will keep hot for several hours in this vessel. Less carburetted metal may be made in the blast-furnace, and the necessary quantity of carbon added at almost no cost."

My friend, Mr. EDWARD WILLIAMS, is at present designing a large Bessemer steel works for his company. He proposes to run the metal direct from the blast furnaces into the converters. I have no doubt that he will be successful, and the economy will be very considerable. By treating the iron in this way, Bessemer steel will, in my opinion, be produced cheaper than wrought iron can be made from the same quality of pig iron, by the process now in use. I am speaking, of course, of the manufacture of Bessemer steel for ordinary purposes. Where a very special quality is required it may be necessary to select the pig iron, as we now do, and to re-melt it; but this will be a matter of experience. Mr. BESSEMER, as we have seen, has, by his splendid invention, enabled us to produce a metal far superior to wrought iron, at a very moderate cost.

Another member of our Institute, Dr. SIEMENS, has worked out, in a different way, the same problem, with much success. The idea of producing steel by melting together cast and wrought iron, or cast iron and ores, in suitable proportions, is of course old, but it was not until Mr. SIEMENS brought his scientific and practical knowledge—and a no less wonderful amount of perseverance—to bear on the subject, that the mode of making steel known as the "Siemens-Martin process," was perfected. The most important element in the successful accomplishment of the Siemens-Martin process is unquestionably the "Siemens, or regenerative, gas furnace." By its means any degree of heat, even to the fusing point of the most refractory materials, can be obtained economically and without resorting to air blast or cutting draughts, and these conditions are indispensable where we have to deal with a bath of mild steel, exposed to the surface action of the flame. An adequate idea of the elevated temperature obtainable in these furnaces may be formed by considering that near the end of each operation the furnace contains from 5 to 6 tons almost chemically pure iron in a state of perfect fluidity, beneath a covering of slag several inches thick. Mr. SIEMENS estimates this temperature at 2,200 deg. C. As early as 1861, Mr. SIEMENS mentioned the applicability of his furnace to the production of cast steel on the open hearth, and since that time he has steadily pursued this important object, which must be ranked amongst the successful processes in the metallurgy of iron.

In working out this process and bringing it into practical use, Messrs. EMILE and PIERRE MARTIN distinguished themselves, and their names are honorably associated with that of Mr. SIEMENS as having helped to perfect the invention. Mr. SIEMENS states that he is now erecting furnaces of 10 tons capacity, which will be capable of producing 20 tons of steel in 24 hours, if pig and ore be used, and 30 tons if pig and scrap be employed.

The steel made by the Siemens-Martin process is used for all the purposes to which soft steel is commonly applied. It is used in England for casting screw propellers, and for various other high class steel castings. At Creuzot, a mild steel is produced by this process containing only 10 per cent. of carbon, which is used for piston rods, and other parts of engines, for boiler plates, and, more recently, for shipbuilding.

TO BE CONTINUED.

The Rights of Strikers.

A CASE has been decided in the English courts which very clearly defines the limits where the functions of Trades Unions cease. Hitherto no legal decision upon the precise point at issue has been reached, and thus the judgment becomes of the utmost importance as a precedent for the guidance of working men.

Messrs. JACKSON & GRAHAM are an old established and well-known firm of cabinetmakers and upholsterers in London. They have two factories, and their business is extensive. One factory has always been worked on the piecework system; but in the other, up to November, last year, the men had been paid by the hour. About the middle of that month the firm resolved to change the system in the latter, and they announced that from a certain date employment would be given constantly to all the hands at a stated price for a given amount of work. This the men objected to, and on their behalf a protest was sent to Messrs. JACKSON & GRAHAM by the committee of the Alliance Cabinetmakers' Association. An interview was also sought by them and obtained, but the resolution was not affected, and, as a consequence, the men struck. Only one man and two boys remained at their posts in the shop. The firm at once advertised, and a full body of men was immediately obtained, many applicants having gone a long distance, only too glad to get a chance of working for the firm. The strikers, through their association, now had recourse to pickets. They placed a number of men outside in the streets to watch the shops. These waylaid the workmen as they went to and from their work, and tried to persuade them to leave. They continued the system for three months with great perseverence, but apparently with little success. The new-comers gave satisfaction, and declined the offers of the society, and the work went on as usual. But the picketing became an annoyance, and Messrs. JACKSON & GRAHAM determined to have its legality tested in the courts. Accordingly they caused five of the most energetic of the pickets to be arrested, and these have now been tried in the Central Criminal Court on a charge of conspiring to molest workmen, with intent to induce them to leave their employment, and, further, to coerce employers to cease to emply those workmen.

The men were defended by five leading members of the criminal bar, and the trial lasted two days. The plain facts, as we have stated them, were proved and not denied, the defendants not calling any witnesses. It must, however, be particularly remarked that no violence was charged; only once was there any semblance of threatening language said to have been employed, and that was so slight, if not questionable, that the prosecution laid no stress upon it. The conduct of the defendants had been limited strictly to waiting for the workmen, and endeavoring to persuade them to follow their example, and strike.

The counsel for the prosecution, Mr. HAWKINS, who it will be remembered, conducted, with marked ability, the case against the Tichborne claimant, admitted the perfect right of working men to make their own bargains. But he submitted that employers must also be allowed to conduct their business in their own way. Baron CLEASBY, before whom the case was tried, very clearly defined the law in such matters. He pointed out that in cases of conspiracy the offense lies in the agreement to do a certain thing, and not in the doing of it; while any molestation or obstruction offered to a person with a view to coerce him—if a working man, to quit his employment, or if a master, to alter his mode of carrying on his own business—was an offense at law. Picketing might not be unlawful under certain circumstances, but it is when it is carried on in such a manner and to such a degree that it might be expected to influence other persons to the extent of annoyance, apprehension or loss.

The question for the jury was simply one of facts, and they returned a verdict of guilty against all the defendants. The Judge, in delivering sentence, expressed his belief that such conduct as that of which the prisoners had been convicted would, if persisted in and followed, be subversive of any form of society. In consideration, however, of the probability that the men had acted under a mistaken idea of what the law in such cases must be, the lowest penalty—that of one month's imprisonment—was inflicted upon them.—*New York Times.*

Notes.

Fine Specimens of octohedral iron pyrites have been recently found in the vicinity of Gallatin, Penn.

Attention is being directed to the large quantities of pure white crystalline limestone, found in Clarendon, Province of Quebec.

A Great Excitement has been created in Rochester, N. H. and its vicinity, by the announcement of the discovery of silver. An examination of the "silver," which is a highly lustrous, silvery-gray, metallic-looking body, has proven it to be mispickel. The excited persons who have missed silver this time, have at least mispickel, and it is worth looking after.

Puddlers' Pay.—At Pottstown, puddlers' pay is $4 35; at Scranton, $3 50; at Norristown, $4 00; Elmira, $4 50; Phœnixville, $3 75; Lehigh region, $5 25; Philadelphia, with extras, $5 75. At Conshohocken, we believe, $5 has been paid, in compliance, probably, with some previous understanding between employer and employees; throughout New England, from $3 50 to $4 50.

Antimony.—The Bakersfield *Southern Californian*, of April 29, says: "The Temple antimony mine, in San Emidio cañon, is being opened, and furnaces are soon to be erected to reduce the ore to a condition for shipment to England for further refinement. Mr. QUINN, an old prospector, who has spent several years in the San Emidio mountains, hunting for mines, has consolidated his interests with the Temple Company."

New Source of Magnetism.—M. DONATO TOMMASI.—If a current of steam at a pressure of 5 to 6 atmospheres is passed through a copper tube of 2 to 3 mm. in diameter, and coiled spirally around an iron cylinder, the latter is magnetised so effectually that an iron needle, placed at the distance of some centimetres from the steam magnet, is strongly attracted, and remains magnetic as long as the steam is allowed to pass through the copper tube.

Co-operation.—Last Fall twenty young men and women of Springfield, Mass., who wished employment, associated themselves together, paid in a small capital, hired a workshop and boarding-house and began manufacturing toys; table mats and baskets. They laid aside one-fourth of their wages to accumulate as capital, and in six months saved $1,424 from their wages and $350 in board and washing making a total saving of $1,874 by this system of self-support.

New Russian Coal Fields.—Saghalien, an island at the mouth of the river Amoor on which there are extensive coal fields, has been ceded by Japan to Russia, under a convention signed by the Czar shortly before he left for Germany. We cannot fail to notice this significant announcement, because of the extensive bed of coals, which will probably make this a valuable coaling station. These coal fields are to be worked by Russian engineers and miners, and it is intended for this purpose to employ a large number of convicts from Siberia.

The Right of the Pennsylvania Legislature to Tax the Franchises of Coal Companies.—HARRISBURG, Penn., May 31.—The decision in the Kittanning Coal Company *agt.* the Commonwealth establishes the right of the Legislature to

classify corporations having franchises to mine and sell coal, and to impose a tax upon their franchises, of which they make merchandise The decision in the case of the Pennsylvania Coal Company *agt.* the Commonwealth declares that the tax imposed by the 9th section of the act of the 1st of May, 1868, is a tax on franchise and not on coal, and that tax under that section for the period between the 1st of January, 1871, and the 24th of April, 1874, can be collected.

Mount Diablo Coal at San Francisco.—Our monthly receipts from Mount Diablo mines for a period of years are as follows:

Months.	1871	1872	1873	1874	1875
January	9,331	14 671	13,907	15,145	14,181
February	8,832	13,627	10,447	13,589	14,344
March	10,508	16,030	12,178	14,258	12,355
April	9,157	13,062	11,525	15,048	13,732
Total	37,828	57,390	48,057	58,040	54,612

Relative Value of the Different Kinds of Coal Used on the Pacific Coast.—We give below the results of experiments with different kinds of coal at the pumping works of the Spring Valley water works of this city. These figures were furnished to the Mechanics' Institute by CHARLES ELLIOTT, City Superintendent of the Spring Valley water works. There were four tubular boilers, two used at a time, fifty-two inches in diameter by fifteen feet long; sixty-seven three-inch tubes, steam drum four feet high, three feet in diameter; grate bars five feet by four feet, worked with twenty pounds of steam. Two condensing engines, one worked at a time, cut-off at nine inches and ten inches, variable cut-off regulated by speed of engine; cylinders, four foot stroke, forty inches in diameter. Four pumps, double acting, geared from engine to make one stroke to 4.368-1000 of engine. All the pumps are run together. Two pumps, fourteen inches in diameter, seven feet stroke; two pumps, twelve inches in diameter, five feet stroke. Speed of engine, 1900 to 2000 revolutions per hour, running continuously. In these estimates there is no allowance made for ashes or for waste of coal in any way. All the coal was weighed accurately, and all the water measured through a Worthington meter. The smoke stack is 116 feet high above the grate bars, square, five feet in diameter at the bottom and seven feet at the top; natural draft. Duty is given for each 100 pounds of coal in foot pounds—that is, pounds raised one foot high with each 100 pounds of coal.

May 24th, 1872, Mt. Diablo Screenings	23,000,000 lb.
June 24th, 1869 " " " Eureka Mine	23,678,000 "
Dec. 24th, 1870 Mt. Diablo Coal, Black Diamond	25,754,400 "
Sept. 5th, 1870, Mt. Diablo Screenings, Union Mine, 6 14-100 pounds of water to one of coal	25,588,636 "
Feb. 4th, 1870, Mt. Diablo Screenings, Pittsburgh Mine	24,850,450 "
Jan. 6th, 1871, " " " Union Mine	28,102,173 "
Sept. 14th, 1870, " " " " " 7 3-100 ponnds of water to one of coal	26,333,557 "
June 26th, 1873, Seattle Coal	29 630,000 "
June 5th, 1873, Bellingham Bay Screenings	29,048,000 "
Dec. 2d, 1873, Welsh Coal	37,252,000 "
June 18th, 1873, Sydney Coal	38,215,700 "
July 4th, 1874, " "	38,889,200 "
Feb. 8th, 1870, Anthracite Coal	37,600,000 "
Nov. 9th, 1870, " " 10 37-100 pounds of water to one of coal	40,657,500 "
May 14th, 1870, Sydney Coal	40,032,000 "
July 3d, 1869, Nanaimo Coal	32,317,600 "
Aug. 29th, 1870, Sydney Coal, ten pounds of water to one of coal	37,036,184 "

STATISTICS OF COAL PRODUCTION.

This is the only report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative Statement for the week ending May 29:

	1875.		1874.	
	Week.	Year.*	Week.	Year.
Wyoming Region.				
D. and H. Canal Co.	75,421	1,191,958	61,464	1,015,592
D. L. and W. RR. Co	88,426	1,251,734	68,404	1,040,539
Penn. Coal Co.	30,461	482,864	30,277	478,754
L. V. RR. Co.	9,919	345,600	21,399	413,443
P. and N. Y. RR. Co.	4,273	37,984	1,395	29,881
C. Rit. of N. J.	16,927	162,849	45,265	530,060
Penn. Canal	..	..	..	..
Lack. and B. RR.	..	59,546	..	87 718
	225,427	3,532 535	228,204	3,595,987
Lehigh Region.				
L. V. RR. Co.	10,321	159 697	75,612	1,234,999
C. RR. of N. J.	23	5,628	37,230	396,660
D. H. and W. B. RR.	1,149	18,627	1,124	7,635
	11,493	183,952	113,966	1,639,294
Schuylkill Region.				
P. and R. R. RR. Co.	30,446	469,720	132,139	1,876,406
Shamokin and Lykens Val.	30,066	386,073	30,556	300,602
	60,512	855,793	162,695	2,177,008
Sullivan Region.				
Bul. and Erie RR. Co	..	5,419	534	11,512
Total	297,432	4,577,699	505,399	7,422,802
Increase	..	..	..	..
Decrease	207,967	2,846,102	..	..

* Year beginning January 1st.

The above table does not include the amount of coal consumed and sold at the mines, which is about seven per cent. of the whole production.

The following table does not give the entire production of our bituminous mines, but it is by far the fullest report published.

The Production of Bituminous Coal for the week ending May 29, was as follows:

Tons of 2000 lb., except where otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lb.	66,168	763,296
Barclay Region, Pa.		
Barclay R.R. tons of 2240 lb.	5.580	110,497
Broad Top Region, Pa.		
Huntingdon & Broad Top R.R.	6,620	87,521
*East Broad Top	1,528	17,730
Clearfield, Region, Pa.		
*Snow Shoe	1,522	32,406
*Tyrone and Clearfield	7,156	288,672
Allegheny Region, Pa.		
*Pennsylvania R.R.	9,195	97,243
Pittsburgh Region, Pa.		
*West Penn. R.R.	5,091	81,112
*Southwest Penn. R.R.	394	3,467
*Penn. and Westmoreland gas coal, Pa. RR	3,785	165.388
*Pennsylvania R.R.	11,060	131,780
Kanawha Region, W. Va.		
Chesapeake and Ohio R.R.	4,700	60,457

* To May 21.

The Production of Coke for the week ending May 21.

Tons of 2000 lb.

	Week. Tons.	Year. Tons.
Tyrone and Clearfield	13	274
Alleghany Region	..	53
West Penn. R.R.	1,561	19,659
Southwest Penn. R.R.	5,200	189,756
Gas Coal, Penn. R.R.	506	9,653
Pittsburgh Coal, Penn. R.R.	2,436	36,153

The receipts at Buffalo, via. L. S. & M. S. R.R. for the week were 4,188 tons, and by Lake 178 tons. The exports by Lake were 24,233 tons.

The exports of coal from Baltimore for the week were 539 tons, and for the year, 21,625, as compared with 48,804 tons to the corresponding time in 1874.

The decrease of shipments of Cumberland coal over the Cumberland Branch, and Cumberland and Pennsylvania Railroads, amounts to 56,745 tons.

Belvidere Delaware RR. report:

	week.	year 1875.	year 1874.
The receipts of coal at Coal Port (Trenton)	..	206	93,394
" " " South Amboy	99	19,801	290,122
Shipments at Coal Port (Trenton)	..	196	92,856
" South Amboy	415	97,812	242,625

Receipts at Greenwich, Philadelphia:

	Bituminous.	Gas Coals.
Receipts	6,278	3,015
Shipments	5,265	3,330
On hand	1,629	135

The receipts at Port Richmond for the week were 7,500 tons, shipments 6,500 tons, and balance on hand 4,500 tons.

Shipments from Pictou, N. S.

	tons. week.	year.
To United States	1183	1618
" West Indies	—	—
" South America	—	—
" Canada	2950	5050
" Other Provinces	2264	3465
	6397	10,133

Shipments from the Block House, Cow Bay, C. B., to the following destinations:

	week.	year.
Provinces	637	2377
West Indies	—	486
	637	2863

Production of Bituminous Coal, 1875.

Tons of 2000 lb.	Previous.	March.	Total.
Blossburgh Region	43,802	25,994	69,796
Barclay Region	55,307	25,167	80.474
McIntyre Coal Co.	9,861	5,946	15,807
Broad-Top Region	23,247	24,500	47,747
Cumberland Region	164,763	123,839	288,602
East Broad Top	3,881	3,317	7,198
Snow Shoe	11,901	7 483	19,384
Clearfield Region	106,776	91,237	198,013
Alleghany Region	29.747	14,361	44,108
Pittsburgh Region.			
West Penn. RR.	29,813	16,442	46,255
Southwest Penn. RR.	937	547	1,484
Gas Coal, Penn. RR.	126,260	21,938	148,198
Pittsburgh Coal, Penn. RR.	38,675	25,918	64,593
Saw Mill Run RR.	287	11,996	12,283
Cleveland and Pittsburgh RR.	46,782	26,797	73 579
Pittsburgh, Cincinnati and St. Louis RR.	115,418	68,929	184,347
Erie and Pittsburgh RR.	17,870	6,007	23,877
Pittsburgh, Fort Wayne and Chicago RR.	30,242	21,139	51,381
Pittsb'g. & Castle Shannon RR.	46,732	..	16,732
A. V. & P. R.R.	475	526	1,001
Pittsburgh and Connellsville RR	50,254	30,865	81,119
Monongahela Nav. Co.	..	..	..
Keeling & Co.	17,491	9.405	26,896
Wettengell & Gormley	4,613	2,184	6,797
J. W. Carlin & Co.	..	..	..
Pittsburgh Va. & C. R.R.	6,444	3,303	9,747
Allegheny Valley R.R.	92,181	..	92,681
Gray & Bell	2,120	1,341	3,461
St. Louis Region.			
St. L. A. & T. H. R. R. and Branches	61,943	33,121	95,064
Illinois and St. Louis	..	..	..
Indiana North and South RR.	264	..	264
Evansville & Crawfordsville RR	5.151	2,483	7,634
Ohio & Mississippi RR.	39,696	..	39,696
Sewanee Region.			
Tenn. Coal & R.R. Co.	18,239	..	18,239
Kanawha Region.			
Chesapeake and Ohio RR.	13,982	..	13,982
Warrior Region, Ala.			
South and North Alabama RR.	6,928	3,792	10,720
Cahaba Region, Ala.			
South and North Alabama RR.	2.790	1,700	4,490
S. R. & D. R.R.	2,324	1,147	3.471
Chicago B. & Q. R.R	77,295	32,524	109,819
B. & M. R.; R.R.	14,874	7,900	22,774
Union Pacific R. R.	35,597	25,772	61,369
Keokuk & Des Moines R. R.	..	..	..
Denver & Rio Grande	6,043	939	6,982
Cairo & St. Louis	3,106	..	3,106
	1,334,601	678,559	2,013,700

COAL TRADE REVIEW.

Duties.

Anthracite free. *Bituminous*, per ton of 28 bushels, 80 lb. to the bushel, 75c., gold.

All *slack*, or *culm*, such as will pass through a half-inch screen, per ton of 28 bushels, 80 lb. per bushel, 40c., gold. Not otherwise provided for, per ton, 40c. gold.

NEW YORK, Friday Evening, June 4, 1875.

Anthracite.

Although every pound of anthracite coal that reaches the market is promptly taken up, yet the demand is not so great as it was a few weeks ago. There is plenty of all sizes being offered at circular rates, and broken and egg sizes are said to have been sold by speculators for less. The companies at work are fully engaged in supplying the wants of their regular contractors.

As will be seen by our statistical tables, the out-put last week shows an increase of several thousand tons over the preceding week. It has now reached the highest point of this year.

The Anthracite Miners' Strike.—The first of June has passed, and a general resumption has not taken place, although some additional collieries resumed work. The feeling is very general that the strike will soon end; many fixing on the middle of this month as the time when work will be resumed, while others think it will not take place until the first of July, and there are still others who think that colliery after colliery will resume, until the men remaining out will find themselves so much in the minority that they cannot but see that a general resumption is the most sensible thing. The Philadelphia and Reading Coal and Iron Co., had seven collieries at work on the 2d inst.

Yesterday's despatches show that the comparative good order which had prevailed for several weeks has been broken, and we have reports that a party of several hundred men from Hazleton went into the Mahanoy district and compelled the men at work at the collieries to suspend, with the exception of those at the Coplay colliery of LENTZ, BOWMAN & Co, where the men are said to have remained at work. This mob marched from colliery to colliery carrying terror with it until it had collected a band of about two thousand men. The position had become so threatening that business was suspended in Mahanoy City, and citizens armed themselves and reported at the police headquarters offering their services for the general protection of persons and property. The Sheriff's *posse* attempted to disperse the mob at KING, TYLER & Co.'s colliery, which brought on a general conflict resulting in more than one hundred shots being fired, and the wounding of four or five of the Sheriff's party, and seven or eight of the miners, one of the latter afterwards dying. A mob of about one hundred men fired the colliery of WILLIAM SCHWENCK & Co., near Mount Carmel. The property was almost entirely destroyed. The colliery had been at work for about two days at reduced prices. If such actions are the result of union, all peaceable citizens will join in the wish that the companies may crush out so dangerous an organization. There is nothing left now but for the companies to take a decided action and at once apply the pains and penalties of the law to the most prominent conspirators, as was done in the Clearfield Region. This would probably open the eyes of the most sensible of the men to the danger of their course and would lead promptly to a general resumption of work. So mote it be!

The Sinews of War.—A contemporary intimates that the Lehigh and Wilkes-Barre Coal Company is not in a position to continue the strike. On the 10th of last month this company offered bonds to the amount of

$5,000,000, part of a $15,000,000 loan. They were put on sale at $95, and the demand was so brisk that they were first advanced to $97 50, and afterwards to par. Under these circumstances there can be no doubt of the company's ability to hold the position they have taken.

This should relieve the anxiety of our contemporary, and convince the miners of the strength of the power they have undertaken to fight. A company that can negotiate seven per cent. bonds at par in this market, must have pretty sound bottom.

Bituminous.

The Cumberland trade moves along in a quiet way, with a very large quantity of coal being shipped on account of previous orders, and for numerous small orders which are constantly coming to hand, and which aggregate a large amount. During the month of May, the shipments of coal over the Chesapeake and Ohio Canal amounted to 121,395 tons, which was greater than ever before in a single month. On Tuesday of this week, there was made the largest day's shipment, amounting to 58 boats, or 6,527 tons. The difference between the total shipments of Cumberland coal, from January 1st of this year, as compared with last year, is being reduced each week, so that by the 1st of July the figures will stand about the same for both years. Many of the companies are now so full of orders that there is considerable inclination shown to advance prices, and we are informed that two of the companies have done so already. There are, however, some who continue to offer at the low prices that prevailed during the past month. It is said that bituminous coal has entered into such general use in some of the Eastern manufacturing towns as to entirely change the appearance of the places, owing to heavy clouds of black smoke overhanging them. The substitution of this coal for anthracite has been very great. About 60 per cent. of the Cumberland interests have expressed their willingness to enter into a combination similar to that now existing in the anthracite trade. It is the desire of those forming the combination to secure at least 80 per cent. of the whole interest, and it is believed that in a very few days their object will be accomplished.

Foreign and Gas Coals.—There is nothing doing in gas coals, as most of the contracts for the year's business have been made; those remaining over being of a very trifling nature. We note the arrival of the "Rota" from Newcastle with about 700 tons on account of an order from one of the gas companies.

The Pittsburgh *Evening Leader* says that on the line of the Pennsylvania Railroad, between Larimer and Penn station, there is a general reign of terror, and although a great many miners desire to work at the companies' terms, yet they dare not do so. There have been threats to burn the town of Irwin, and in consequence a guard of 60 men are kept on watch from 9 P. M. until 5 o'clock A. M.

Freights.—At this port, freights are very much depressed, the general rate being $1 per ton to Boston, and other ports very irregular. From Baltimore and Georgetown they are without material change. Vessels to go from here to Baltimore to load for Boston are asking $1 75 per ton, while vessels down there are asking from $1 50@$1 75. Georgetown rates are firm at $1 75 to Boston, and $1 50 to Sound.

Wholesale Prices of Anthracite Coal f.o.b., at the Tide Water Shipping Ports per ton of 2240 lb.

The following prices comprise only those of the Lackawanna, Scranton and Pittston Companies, for the month of June. Rates of all the other companies are in abeyance, pending the settlement of the strike.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals.						
Lackawanna and Scranton at Elizabethport & Hoboken	4 90	5 00	5 10	5 25	5 70	4 70
Pittston at Newburgh	4 85	4 85	4 95	5 05	5 55	4 60

Pittston coal is delivered to carts in New York or Brooklyn at 65 cents per ton in addition to the above rates.

	Per ton.
Freight from Hoboken and Weehawken to New York	40c.
" " Elizabethport & Fort Johnston to New York	45c.
" " South Amboy to New York	50c.

Freight on Lackawanna coal from Rondout to New York, by boats or barges of the D. & H. Canal Co., 50c. per ton.

Wholesale Prices of Bituminous Coal.

Domestic Gas Coals.

Per ton of 2240 lb. Westmoreland and Penn, at	Shipping Ports. At Greenwich,	Alongside in New York.
Philadelphia	$5 20	$6 50
" " at S. Amboy	6 00	6 50
Red Bank Cannel Pa., at Phil	8 00	8 50
" " at S. Amboy	8 50	....
" Orrel,	6 00	6 50
Youghiogheny, Waverly Co., at Baltimore	5 00	6 50
Despard, West Va., nominal "	4 75	6 50
Murphy Run, W. Va. at Baltimore	4 75	6 50
Fairmount, W. Va " "	4 75	6 50
Newburgh Orrel, Md. " "	4 75	6 50
Canneltion Cannel, W. Va., at Richmond	9 50	11 00
" Splint, " "	5 00	6 50
Peytona Cannel, " "	9 50	11 50
Straitsville, " At Sandusky, O "	3 25	10 00

Foreign Gas Coals.

	Sterling.	Am. cur'cy.
Newcastle, at Newcastle-on-Tyne	10/6@12/9	6 50@ 7 00
Liverpool House Orrel, at Liverpool	26/	13 00
Ince Hall Cannel "	47/	18 00@20 00
" Gas Cannel "	30/	12 00
Scotch Gas Cannel, at Glasgow, nominal	25/	7 50
	Gold.	
Block House, at Cow Bay, N.S.	2 00	5 50
Caledonia, at Port Caledonia	1 75	5 25
Glace Bay, at Glace Bay	1 80	5 50
Lingan, at Lingan Bay	75	....
Sydney, International and Reserve mines, at Sydney	2 00	5 50
Pictou, Albion and Vale mines, at Pictou	2 25	5 75

Steam and House Coals.

Broad Top, at the mine, $1.25; at Amboy	4 75@5 00	5 25@5 50
Cumberland, at Georgetown and Alexandria, Va.	4 00@4 25	....@....
Cumber and at Baltimore	4 15@4 50	5 75@6 25
Clearfield, "Derby," "Kittanning," "Sterling," and "Eureka," at the mines, $1.25; at Greenwich, Phil.	4 60	5 65
James River, carbonite, at Richmond, Va	....	....
" bituminous, "	....	....

Retail Prices in New York.

Anthracite.

Per 2000 lb.	Grate and Egg.	Stove.	Chestnut
Pittston coal, in yard	$6 20	$6 40	$5 60
*Lackawanna Coal, del'd	6 75	7 00	6 25
Wilkes-Barre, delivered	6 50	6 75	6 00
Lehigh & Locust Mountain, del'd	....	....	....
Schuylkill Red Ash del'd	....		

The cost of delivering Pittston coal ranges from 40 cents to $1 per ton, according to distance from the yard.

* Lackawanna grate is quoted 25c. per ton less than egg.

Bituminous.

Liverpool House Orrel, delivered, per ton of 2000 lb	$23 00
Liverpool House Cannel " " "	25 00
American Sterling " " "	13 50
American Orrel " " "	13 00@16 00
Red Bank Cannel " " "	14 00
Carbonite " " "	12 00
Cumberland " " "	9 00
Acadia, Pictou, N. S. " " "	14 00

Baltimore, Md. June 1, 1875.

Reported by our Special Correspondent

WHOLESALE PRICES PER 2240 lb.

ANTHRACITE.

	By cargoes.	In cars.
Wilkes-Barre, "Lee," or "Diamond,"		
Lump, steamboat	....	$5 60
Broken	....	5 70
Egg	....	6 05
Stove	....	6 25
Pittston and Plymouth.		
Lump and steamboat	....	5 50
Broken	....	5 70
Egg	....	6 05
Stove	....	6 25
"Boston," freeburning white ash	....	5 50
Egg	....	5 70
Stove	....	6 05
Shamokin, (red or white ash)	....	6 25
Egg	....	6 05
Stove	....	6 25
Lykens Valley, red ash, egg and stove	....	6 55

From wharf or yard, wholesale, 50@75c. additional.

By retail, all kinds and sizes, per 2,240 lb, $7 25@8 25.

BITUMINOUS.

George's Creek and Cumberland f. o. b. at Locust Point for cargoes	4 40	4 50
West Va. Gas Coal f. o. b. at Locust Point	5 50	...

Boston. May 29, 1875.

Reported by our special correspondent.

CARGO PRICES TO TRADE.

Lingan coal	$ 5 75	Westmoreland, and Penn.	7 25
Caledonia	5 00	Waverly Co. Youghiogh'y	7 25
Pictou	6 15	Canneltion Cannel	11 75
Block House	5 60	Cumberland	6 25@ 6 50
Red Bank Cannel	10 00	Anthracite	6 50@ 7 25
Glace Bay	5 00	" Retail	7 50@ 8 00
Sydney	7 00		

The *Commercial Bulletin* of May 29, gives the following receipts at Boston.

"The week's receipts have been 17,194 tons domestic, against 42,616 tons domestic, and 233 tons foreign for the corresponding week last year. Total receipts since Jan. 1, 1875 187,678 tons domestic and 1,664 tons foreign, against 283,310 tons domestic and 3,727 tons foreign for the same time last year, and 259,990 tons domestic and 7,406 tons foreign for the same time in 1873."

Buffalo, N. Y. June 1, 1875.

Reported by our Special Correspondent.

Trade for retail purposes in Anthracite has been quiet. Prices declined on the 1st, in accordance with "programme."

Among the trade it is generally understood that last year's arrangement for a monthly advance will be carried out, only it *may not* be restricted to ten cents each month.

The demand for bituminous for steam is fair, but prices are low; so low that we doubt if the mines are more than paying expenses. The Buffalo Coal Co. are out with circulars, offering to deliver their coal in this market, June 1st, prices about the same as Catfish—quality not yet thoroughly tested, but reported good. The mines are in McKean County, Pa., about one hundred miles distant from here. Their road leaves the B., N. Y. and P. R. R., at Larrabee's and the intention is to continue the road on to the Reynoldsville Basin for gas coals.

Owing to strikes in the Connellsville section the supply of coke has been limited, while the demand has increased, and prices are firmer. We, however, still quote at $5 75 on Lake Shore cars.

ANTHRACITE.

	Afloat	F.O.B Vessel	Retail, Deliv'd
Grate	$5 50	$6 00	$7 00
Egg	5 50	6 00	7 00
Stove	5 95	6 45	7 45
Nut	5 70	6 20	7 20

	Lump	R of M	Nut.	Slack.
Catfish	$3 75	$3 50	$3 25	$2 75
Stoneboro			3 25	2 75
Youghiogheny	4 75			
Sterling Cannel	5 50			
Connelsville Coke	5 75			

Chicago, Ill. June 1, 1875.

Specially reported by Messrs. RENO & LITTLE, Coal Merchants.

No changes in prices of coal. A few cargoes of anthracite and Blossburgh coal have arrived.

Cincinnati, O. June 1, 1875.

Reported by our Special Correspondent.

Prices unchanged. Market dull.

Per ton of 2000 lb.

	Bush.	Ton.
Youghiogheny, or Pittsburgh, afloat	3½c.@9c.	—
Pomeroy coal	6c.	—
Cannel coal	16c.	—
Semi Cannel	8c.	—

The following are retail prices delivered:

Youghiogheny	— c.	$3 35
Pomeroy	— c.	2 80
Cannel	— c.	5 60
Kanawha Semi Cannel	— c.	3 35
Anthracite		9 50
Foundry coke	8c @10 c.	—
Soft coke	8 c @10 c.	—

Cleveland, O. May 31, 1875.

Reported by our Special Correspondent.

The *Manufacturing and Trade Review*, of June 1st, says: "The coal market has been rather more settled of late, there being no change in prices, and the supply fully up to the demand. The demand, however, has not been what it would have been without the strikes, many furnace customers and consumers at Lake points preferring to hold their orders until the striking question is settled beyond cavil or peradventure.

"Since resumption in the Tuscarawas district, shipments from Straitsville have been somewhat curtailed, as freights favor the shorter haul, though large shipments are still made from that district.

"Work has not been resumed in the Mahoning district, the operators still resisting the advance asked by the miners, which they say they will not pay, and plans are on foot with some banks to put in an entire new set of men.

"At Straitsville the miners are receiving 50c. per ton, yet the much larger haul to market does not give operators in that locality any advantage over the Tuscarawas, where the price for mining is 80c. per ton. The people of the Tuscarawas country made a mistake by acceding to the demand of their miners, as they will have to fight their own battles over as soon as their equal competitors in the Mahoning region get at work again on the old prices."

Connellsville, Pa. June 2, 1875.

We are pleased to report a decided improvement in the coke trade for the last week. From a comparison of our shipments with last week it will be seen that the number of cars increased from 822 to 1,254, or about 33 per cent. The prices obtained are still less than the operators consider the coke is actually worth, but they have gone through such a long depression in the business that they have learned to bear the ills they have with commendable patience. Sales at 2½ and 2¾, and some as high as 3c. are reported, but we believe that 2¾ is the average price obtained on four months sales.—*Tribune.*

Detroit, Mich. May 31, 1875.

Specially reported by Messrs. ROBINSON & KEYS, dealers in all kinds of coal.

Erie, Pa. June 1, 1875.

Reported by our Special Correspondent.

Wholesale, per ton of 2,000 lb.

Bituminous f.o.b.

Briar Hill lump $4 00 | Beaver lump $4 00

Indianapolis, Ind. June 1, 1875.

Specially reported by Messrs. H. McCOY & Co.

Per ton of 2000 lb.

BITUMINOUS.

Wholesale on board cars in city.

Block coal	$2 50@$2 75	Indiana cannel	6 75
Best "	2 40@ 2 50	Hocking Valley	4 25
Block Nut, per car	18 00	Youghiogheny	5 00
Highland " "	18 00	Blossburg (smithing)	6 50
Block slack, per car load		Piedmont "	7 75
Peytona, cannel per ton	8 75	Gas coke, per bushel	80

ANTHRACITE (Lackawanna).

Grate	$8 70	Chestnut	8 60
Egg	8 70	Stove	8 85

Retail, per bushel of 70 lb.

Block	16c.	Peytona Cannel	32c.
Highland	14	Indiana "	26
Highland Nut, dom. size	9	Youghiogheny	24
Block " "	9	Blossburg	26
Slack, steam, "	8	Piedmont	30
Block & Highl'd Mt. steam—			

ANTHRACITE.

	per ton.		per ton.
Grate	$11 00	Stove	$11 00
Egg	11 00	Chestnut	11 00

Louisville, Ky. June 1, 1875.

Specially reported by Messrs. BYRNE & SPEED.

Our demand is now very limited, and margin small, on ac-

count of the light supply of Pittsburgh coal, and poor prospect of another run this season. The price is now ten cents in the river.

There has been very little Kentucky coal brought in for a month past.

The following are our retail prices:

Pittsburgh, per load of 1900 lb	$3 00
Screened Raymond City	2 75
Pine Hill	2 75
Buckeye Cannel	5 00
Peytona Cannel	5 50
Nut and Slack	2 25
Pine Hill nut	2 25
Kentucky lump, per load	...
" nut, "	....
" Slack "	....
City-made Coke, per bushel	....
Pittsburgh, wholesale, per bush	....
Kentucky on cars at wholesale, per bush	....
Anthracite, per ton	$10 to $10 50

Milwaukee, Wis. May 31, 1875.

Specially reported by Messrs. R. P. ELMORE & Co.

Retail prices per ton of 2000 lb.

Lehigh Lump	$10 00	Briar Hill, select	$8 50
Lehigh Prepared	10 50	Blossburg	8 00
Lackawanna	9 50	Pittsburgh	7 50

New Orleans, La. May 29, 1875.

Market looking up. We quote:

Pittsburgh coal, retail, per bbl	65c.
" wholesale	37½c.
" to steamboats, per box	65c.
" to manufacturers, per bbl	60c.
" shipments per bbl	$6 00
Anthracite, retail, per ton	$12 50
" wholesale per ton	....
Spadra (Arkansas) coal, retail, per bbl	.....
Mt. Carbon, wholesale, per bbl	32c.
" " retail per bbl	60c.
Virginia Cannel, per bbl	90c.
Scotch Cannel, per bbl	1 00

Pittsburgh, Pa. June 1, 1875.

Per ton of 2000 lb. and Bushel of 76 lb.

	per ton.		per ton
Youghiogheny coal	$2 00	Pittsburgh retail delivered per bushel	9c@10c
" coke	2 00@2 25		
Connellsville coal	2 10	Anth'cite on cars Lehigh	$7 75
" coke	2 25@2 50	" " Wilkes-	
Pittsburgh coal	1 85	Barre	6 75

Twenty-five to fifty cents per ton additional for delivery.

San Francisco

From the *Commercial Herald*, May 20, 1875.

Imports from January 1st to May 1st, 1875:

Anthracite, tons	5,051	English, tons	21,409
Australian, tons	33,080	Vancouver Island, tons	23,441
Coos Bay, tons	12,762	Rocky Mountain, tons	22
Cumberland, tons	5,039	Seattle, tons	14,494
Mt. Diablo, tons (3 mos)	54,612	Bellingham By, tons	4,240

We have now to report the arrival of several cargoes from Newcastle, N. S. W., say, *Bayard*, 1,768 tons; *Khandeish*, 1 430 tons. The market at present appears to be surfeited with Steam Coals, owing to liberal imports and a lessened consumption by P. M. S. Company. We quote Sydney cargoes at $9@$9 25. Lehigh continues scarce and high. Nanaimo and Wellington from Vancouver Island may be quoted at $10@$11; Coos Bay, $10; Bellingham Bay, $8 50; California Mt. Diablo Steam, $6 25@$8 25 for fine and coarse respectively; Cumberland continues plentiful and cheap; Seattle arrives freely and is a deserved favorite for household purposes.

Halifax, N. S. May 28, 1875.

Prices per ton of 2240 lb. in gold.

Sydney (old mines)	$4 00	Little Glace Bay	3 50
Gowrie	2 50	Blockhouse	3 75
Victoria	3 50	Albion (at Railroad)	4 00

Toronto, Ont. June 1, 1875.

Anthracite prepared coals arriving freely from Oswego, shipped there by Delaware and Hudson Canal Co., and Delaware, Lackawanna and Western RR. Co. Lake freight 50 cts. gold, per ton—May prices f.o.b. in Oswego, grate and egg $5 50, stove $5 95, chestnut $5 70, American currency. Retail prices here, delivered to consumers, grate and egg, $6 75, stove $7 25, nut $7 00, gold.

Rates of Transportation on Anthracite Coal to Tide Ports.

Schuylkill Coals, per ton of 2240 lb.	From Pine Grove.	From Tamaqua.	From Port Carbon.	From Mount Carbon.	From Schuylkill Haven.
To *Port Richmond*, for shipment, via P. & R. R. R., Main Line	1 87	1 82	1 75	1 74	1 67
Philadelphia, Reach yards	1 97	1 92	1 85	1 84	1 77
Harrisburg, via Lebanon Valley Branch	1 23	1 80	1 73	1 72	1 65
Allentown, via East Pennsylvania Branch	1 52	1 47	1 40	1 39	1 32
Lancaster, and Points on Lancaster Branch, via R. & C. R.R.	1 57	1 52	1 45	1 44	1 37
Dauphin, via Schuylkill and Susquehanna Branch	62	....	1 25 via Aub	1 24 urn.	1 17
Jonestown, via Lebanon and Tremont Branch	86	...	1 69	1 68	1 61
Lebanon, via Lebanon and Tremont Branch	90	....	1 88	1 87	1 80
From *Tamaqua* to *Catawissa*, via Catawissa and Williamsport Branch Railroad					94
From *Tamaqua* to *Williamsport*, via Catawissa and Williamsport Branch Railroad					1 39

For shipment via Main Road or Schulykill Canal, one and one-half cents per ton per mile, and two cents per ton additional, to Port Carbon, Mount Carbon, Schuylkill Haven, Pine Grove, Tamaqua, or Port Clinton, for Canal, as the case may be.

Coal sent to points on the Catawissa and Williamsport Branch will be charged one and one-half cents per ton per mile, and two cents per ton additional to Tamaqua.

From *Port Clinton* to *Philadelphia* via Schuylkill Canal, including freight and charges for the use of cars and barges, and for tolls (exclusive of cost of unloading), $1 59.

The charge from Schuylkill Haven to Philadelphia is 11c. additional to this rate.

On and after June 1, until further notice, a drawback of ten cents per ton will be paid on shipments of Anthracite Coal from Schuylkill Haven and Port Clinton that have passed Fairmount Locks to Philadelphia and vicinity.

The rates of freight and tolls on lump, steamboat and broken coal will be ten per cent. less than the above rates.

Erie Canal.

	per 2240 lb.
Hoboken to Buffalo	75c.
" Rochester	70c.
" Oswego	65c.

The above rates are exclusive of harbor towing, trimming, unloading and tolls.

Freights.

Per ton of 2240 lb.

Ports.	From Baltimore and Georgetown.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Augusta, Me	....	Very Irregular.
Albany	....	
Amesbury, Mass	....	
Bangor, Me	2 00	
Bath, Me	1 65	
Baltimore	...	
Boston, Mass	1 50	
Bridgeport, Ct	1 45	
Bristol, Ct	....	
Derby	....	
Dighton	....	
East Cambridge	....	
Fall River	1 50	
Hackensack	....	
Hartford	....	
Hoboken	....	
Hudson	....	
Jersey City	....	
Middletown	....	
Mystic	....	
Newark	....	
New Bedford	1 50	
Newburyport	1 75	
New Haven	1 45	
New London	1 45	
Newport	....	
*New York	....	
Norfolk, Va	....	
Norwalk	....	
Norwich	1 60	
Pawtucket	...	
Philadelphia	85	
Portland	1 65	
Portsmouth, N. H	1 75	
Providence	1 45	
Petersburg, Va	....	
Richmond, Va	....	
Rockport	....	
Saco	....	
Sag Harbor	....	
Salem	1 65	
Savannah, Ga	....	
Stamford	....	
Stonington	....	
Taunton	....	
Trenton, N. J	....	
Troy	....	
Warren, R. I	....	
Washington	....	
Wareham	1 75	
Wilmington, Del	85	

* The rate by barge from this point is $1 55.

THE BRITISH COAL AND IRON TRADES

May 22, 1875.

North of England.—A steady demand for all descriptions of coal has prevailed and prices remain unchanged. The out-put was materially decreased owing to the stoppage of work during the Whitsuntide holidays. Coke has sold at 15/@17/ 6d. and household coal at 14/. The iron trade of this district is very much unsettled by some recent failures, and buyers are holding off with the expectation of seeing lower prices. Although there is no demand at present, yet all the iron appears to be taken up on account of orders placed previously. Pig iron is selling on the basis of 55/@56/ for No. 3, and 54/ for forge. With the exception of some new works, the manufactured iron trade is well supplied with orders, although the prices obtained are not very remunerative. Rails of ordinary section are quoted at £7@£7 5/; common bars £8; and puddled bars £5@£5 2/.

Barrow-in-Furness.—Orders in hand will keep makers of pig iron well supplied during the summer; No. 1, Bessemer pig is quoted at 85/ per ton f. o. b., No. 2, 82/ 6d.; and No. 3, 80/. In forge iron but little business is being done, makers having but few orders on hand. No. 4, is quoted at 82/ 6d.

Yorkshire and Derbyshire.—The iron and coal trades of this district have been very quiet during the week owing to the holidays. With the exception of a good demand for steam coal for shipment from Grimsby and Hull, the coal trade has been very quiet. Best silkstones are being delivered in London at 28/@29/ per ton and sold at the pits at 13/@14/. There is a very good business doing in Bessemer steel at Sheffield and an important demand for cutlery and light agricultural implements.

Manchester.—There is an improvement in the demand for all descriptions of coal, and prices are more firm, but there is nothing to indicate that this will prove permanent. Owing to the holidays, stocks have decreased. Prices are so low, however, that colliery proprietors have but little, if any, margin. It is rumored that 15 per cent. will be taken off the colliers' wages, but no definite action has been taken in the matter. The following are the average pit prices in the Wigan district: Arley mine coal, 14@15/ per ton; Pemberton four-feet, 12/; common coal, 10/; burgie, 7@7/ 6d.; and slack, 4/ 6d.@5/ per ton. Consumers of gas coal have been placing their orders rather more freely. The price of good screened is 12@13/ per ton at the pit. There are but very few orders being placed for either pig or manufactured iron, and prices are nominally unchanged.

Monmouthshire and South Wales.—Although the Union-men are, as a rule, holding out for a reduction of only 10 per cent., yet the non-Unionists are returning in such great numbers at 15 per cent. reduction, that the strike may be considered nearly at an end, and another week will probably show considerable activity. Considerable coal is being mined and stocked on the furnace banks preparatory to the furnaces lighting. Several furnaces and rolling mills are already in operation.

Scotland.—Prices in the warrant market have receded since last week about 1/ 6d. per ton, not withstanding that a strenuous effort was made by certain speculators, a few days back, to arrest their downward progress. Since last week the prices of the principal makers' brands have also decreased to the extent of about 3/ per ton, and they are thus 5/ below what they were two weeks ago. The quotations are as follows:—G.m.b. at Glasgow, No. 1, 65/; No. 3, 63/; Gartsherrie, 68/ 6d. and 65/; Coltness, 70/ 6d. and 66/; Summerlee, 68/ and 65/; Langloan, 68/ and 65/; Carnbroe, 66/ and 64/; Monkland, 65/ and 63/; Clyde, 66/ and 64/; Govan, 66/ and 64/; Calder, at Port-Dundas, 70/ and 65/; Glengarnock, at Ardrossan, 71/ and 66/; Eglinton, 63/ 6d. and 61/ 6d.; Dalmellington, 65/ and 64/ 6d.; Carron, at Grangemouth, selected, 70/; Shotts, at Leith, 70/ and 66/; Kinneil, at Bo'ness, 66/ and 63/. Both the home and foreign demands for iron are on the increase, as a result, no doubt, of the great reduction which, within the past few weeks, has been made in the prices; but, though the demand improves, the supply more than keeps pace with it, because of the steady way in which work is now carried on at the ironworks. The profit of masters being much smaller than formerly, they are also for this reason induced to produce more and sell more, if they can, to keep up their incomes. The shipments of pig iron to foreign ports for the week ending the 15 inst., amounted to 12,659 tons, showing the large increase of 6,194 tons, as compared with the corresponding week of 1874. The imports of Middlesborough pigs at Grangemouth for the week were 3,790 tons being 1,660 more than in the corresponding week of last year. The foreign demand for coals is somewhat improved since last week, but the home enquiry is still very dull, and the amount of coals brought to market appears to be heavier than ever. Prices have, in consequence, had to be reduced to induce sales, the better qualities falling 3d. and secondary 6d. per ton. The wholesale prices of household coals at Glasgow at present are from 8/ 6d. to 10/ 0d.; steam 9/ to 11/; Wishaw main, 7/ 6d. to 8/ 3d.; smithy, 14/; and splint, 8/ 6d. to 9/ 3d. There is absolutely nothing new to report with reference to the miners, who have all given way to the reductions of wages imposed on them, and it is highly probably that they will have to remain contented with their present low rates of pay for a considerable time.

IRON MARKET REVIEW.

New York.

FRIDAY EVENING, June 4, 1875.

American Pig.—We are unable to learn of a sale worthy of note. The older Lehigh companies continue to quote on the basis of $28 per ton for No. 1 foundry, while companies making as good irons, but not having gained a popularity of long standing, are selling at considerable less than this price. The *best* brands of Scotch iron have been sold at our higher quotation for American, while some brands would not even bring that figure. While this may be partly due to the heavy failures in the English iron trade, it would also indicate that our prices here are not likely to advance—indeed, our advices from other parts of the country show that some of the markets, formerly considered safe for Eastern iron, are now, and will for the future, be supplied from the West. Our Eastern works will consequently continue to overstock this market, and prices are more likely to recede than advance. Messrs. PETTEE and MANN, an old iron house of this city, have suspended payment. No statement of the condition of their business has yet been furnished their creditors. We quote at $26@$28 for No. 1 foundry; $24@$26 for No. 2; and $22@$25 for gray forge.

Scotch Pig.—We are unable to learn of any business

worthy of note. The market is in a very demoralized condition. During the week several large failures in the iron trade were reported in London, the influence of which, added to a dull trade, greatly depressed p ices in Glasgow. There is much uneasiness existing in British iron circles, and there is a general belief that prices will reach a still lower point. To-day's cable information reports the failure of the Phœnix Bessemer Company, which was brought down by the failures of the Aberdare Iron Company, SANDERSON & Co., GILEAD H. SMITH and JAMES DAWBARN—the failures of the four latter having been announced early in the week, with liabilities aggregating about £2,000 000.

The iron that is being sold is bringing less than cost of importation, and the prices realized are kept secret. It is impossible to say at what price iron can be bought. The nominal quotations are Eglinton $30; Coltness $31; Gartsherrie 31@33; and Glengarnock $33. The latest cable information quoted Coltness at 68s. 6d. and Eglinton 61s.

Rails.—We are reported sales of 2,000 tons of English, in bond, at $38 gold, and 10,000 tons of steel rails, by a Pennsylvania mill, for shipment to the far West. The latter lot is supposed to have been at a very low figure and on long time. There are some further inquiries in the market which will likely result in business. We quote American iron, at mill, at $48@$50 currency, and steel at $70@$75.

Old Rails.—There is nothing doing in these, which are quoted at $26@28.

Scrap.—The market for this article is weak, with nothing doing. We quote at $32@$34.

Boston. May 29, 1875.

Pig has had a small business, such as it is. The sales of the week can hardly aggregate over 80 tons, a very meagre trade indeed. This amount of life would hardly indicate anything more than the bare escape from stagnation, but the market has so long been quoted dull, listless, stupid and without interest that a single car-load sale begins to be an item of news. Prices here are probably rather more easy than in the primary markets, but this does not add one bit of enthusiasm to buyers. The wants of foundrymen are very small, while their stocks generally seem sufficient to carry them into July. Holders here are offering prime No. 1, at $27, and show satisfactory evidences of good quality. We quote on wharves No. 1. $29@$31; No. 2, $22@$27, and gray forge $22@$24.

Bar is slacking up its business very perceptibly, and has consequently here and there induced rather an easier feeling. The market this week is hardly as firm at $60 as it has been, but we do not hear of any actual sales at lower figures. The trade have had a visit from a Pittsburgh mill man who has one or two hundred tons to sell through June, which he quotes at 2 4-10c. per lb., with 28c. freight. This would be equal to about $59 92, say $60, and is rather above the views of the trade, who think they must sell at $60 and make a profit, especially now since the benefit of memoranda on sizes has been broken up by the mills. Common iron is without inquiry, and quotes at $54@$56.

Steel still has a fair trade from the largest tool-makers. We quote American tool 15@15½c.; American Machinery 9½@10c.; do. cash tires 8½@12½c.; Sweet's Excelsior Tire, 7c.@7½c.; English Tool, 16c.@17c.

Copper has had a quiet week, and prices are consequently a shade easier. Quotations are nominally 23¼c. for spot and June delivery, but holders would doubtless accept 23c. for large lots, but buyers are quite indifferent at this inducement. We quote 23@23¼ for spot; New Sheathing 30c.; Bolts and Braziers 31c.; Yellow Metal Bolts 28@29c.

Lead is dull but firm. We quote Domestic 6c.; Foreign 6¾c.; *Antimony* is without request, and quoted at 12c. gold per pound; Sheet and Pipe 9¼c. c'y.; Tin-Lined Pipe 16¼c.; Bar lead 9¼c., less usual trade or 10 per cent discount.

Spelter is strong and quiet. The combination still quote $7 25 currency 30 days, or $7 15 currency prompt cash. Sicilian is quiet, quoting nominally $7 30 gold.

Tin is listless and easy. Our quotations are nominal. Plates are quiet. We quote Straites 20c.; Banca 24¾c.; Refined English 19¾c. gold. Plates are active; we quote Charcoal I. C., $9 50@$10; Coke $7 75@$8; and Terne, at $8 50@$11 gold.
—*Commercial Bulletin.*

Cincinnati. June 1, 1875.

Specially reported by Messrs. TRABER & AUBERY, commission merchants for the sale of pig iron, blooms, ore, etc.

We have no change to report in the pig iron market. We continue to quote:

CHARCOAL.

Hanging Rock, No. 1, Foundry	$28 00@29 00	4 mos
" No. 2, "	26 00@27 00	4 mos
" Mill	25 00@26 00	4 mos
Tennesse No 1, Foundry	27 00@28 00	4 mos
Tennessee. No. 2 "	26 00@27 00	4 mos
" Mill	25 00@26 00	4 mos
Missouri, No. 1, Foundry	@	4 mos

STONE COAL.

Ohio No. 1, Foundry	27 00@28 00	4 mos
" No. 2, "	26 00@27 00	4 mos
Ohio Mill	25 00@26 00	4 mos
Missouri, No. 1, Foundry	29 00@30 00	4 mos
" No. 2, "	27 00@28 00	4 mos
" Mill	26 00@27 00	4 mos

CAR-WHEEL.

Hanging Rock, C. B.	40 00@50 00	4 mos
Tennessee "	35 00@40 00	4 mos
Missouri "	35 00@40 00	4 mos
Alabama "	35 00@40 00	4 mos

BLOOMS.

Charcoal	70 00@ 85 00	cash

SCRAP IRON.

Cast	70c.@ 90c.	cash
Wrought	1 10@ 1 40	cash

Chicago. June 1, 1875.

Specially reported by Messrs. ROGERS & Co., dealers in Scotch and American pig iron.

Prices remain unchanged.

Cleveland. June 1, 1875.

The *Manufacturing and Trade Review*, under date of May 25, says: "We have no change to note in the Pig Iron Market. Prices remain firm at former quotations, and the demand for foundry iron is quite limited. There are some inquiries for the low grades, of which there is a short supply. Large additions to the stocks are expected by the first boats from Lake Superior."

The *Manufacturing and Trade Review* of June 1st, says:

"There is still no change in the pig market, sales being made in small lots, just sufficient to meet the most pressing demands, and the supply continues ample. There is no inducement for idle furnaces to go into blast at present, and it would seem the best policy for them to remain out until the mills have consumed the supplies in hand, and a portion of the large quantities which are now coming forward from the Lake Superior country. A slight decline in the prices of some brands will be noticed in our quotations below, indicating a disposition on the part of holders to offer all the concessions possible to effect sales. The firm nature of the market, for four weeks past, has been remarkable, considering the very slow demand."

Louisville. June 1, 1875.

Specially reported by Messrs. GEORGE H. HULL & Co.

The market is dull, with small sales, and a strong tendency to inside quotations.

Round lots could not be sold except at some concession in price. The usual time, 4 months, is allowed on the quotations below.

HOT BLAST—CHARCOAL.

No. 1 foundry, from Hanging Rock Ores	$28 00@29 00	
No. 2 " " "	26 00@27 00	
No. 1, Mill, from " "	24 00@25 00	
No. 1, foundry, from Alabama, Georgia and Tennessee ores	26 00@27 00	
No. 2, foundry, from Ala., Geo'a and Tenn. ores	25 00@26 00	
No. 1, Mill, from " " " " "	24 00@25 00	

HOT BLAST—STONE COAL AND COKE.

No. 1, foundry, from Hanging Rock ores	26 00@27 00	
No. 2, " " " " "	25 00@26 00	
No. 1, Mill, " " " "	24 00@25 00	
No. 1, foundry, from Ala., Geo'a and Tenn. ores	26 00@27 00	
No. 2, " " " " "	25 00@26 00	
No. 1, Mill, " " " "	24 00@25 00	
No. 1 foundry, from Missouri ores	28 00@29 00	
No. 2 foundry, from Missouri ores	27 00@28 00	
No. 1 Mill, from Missouri ores	26 00@27 00	

COLD BLAST—CHARCOAL.

Car Wheel from Hanging Rock ores	40 00@50 00	
" " Tennessee "	35 00@36 00	
" " Alabama and Georgia ores	38 00@40 00	
" " Kentucky ores	30 00@42 00	

Pittsburgh. June 1, 1875.

Specially reported by A. H. CHILDS, Esq., Commission Merchant for the sale of pig iron, blooms, ore, etc.

Quotations are:

No. 1 foundry	$27 00@28 00	4 mos
" 2 "	25 00@26 00	4 mos
Gray Forge	24 00@	4 mos
White and mottled	21 00@22 50	4 mos

The Pittsburgh *Commercial* of May 29, says: "There has been considerable inquiry for metal this week, but confined entirely to small lots for immediate use, and mainly for close gray mottled or white iron, and most of the sales reported are of these grades. Such iron is very desirable as a mixture in hot weather.

"We cannot hear of inquiries for large lots, but as the mills are consuming much more every week than is being made by the furnaces, the stocks are thus being depleted and will certainly produce a scarcity of desirable iron before many weeks if the mills continue to run.

"We are reported the following sales:

BITUMINOUS COAL SMELTED FROM L. S. ORE.

200 tons gray forge	$24 00—4 mos.
200 tons gray forge	24 00—4 mos.
200 tons white neutral	21 00—4 mos.
150 tons gray forge	24 00—4 mos.
100 tons close gray neutral	22 50—cash.
100 tons close grey	22 00—cash.
200 tons gray forge (extra)	25 00—4 mos.
100 tons neutral gray forge	25 00—cash.
50 tons gray forge	22 00—cash.
20 tons silvery	23 00—4 mos.

ANTHRACITE.

230 tons close gray	23 00—4 mos.
100 tons, a mixed lot	21 70—4 mos.
10 tons No. 1 foundry	28 00—4 mos.

CONNELLSVILLE COKE.

200 tons gray forge	24 00—4 mos.
120 tons close and mottled	22 50—4 mos.
10 tons No. 2 foundry	25 00—4 mos.

ALLEGHENY COKE.

500 tons Red Bank	25 00—4 mos.
500 tons Red Bank	25 00—4 mos.

CHARCOAL.

10 tons No. 1 foundry, Hanging Rock	30 00—4 mos.

The *American Manufacturer* of June 2 says:

"PIG IRON.—The pig iron trade has been rather quiet during the past week, for which there were various reasons, including, among others, Decoration Day, together with demonstrations by the Knights Templar and military, all of which had a tendency to retard business. However, the general tone of the market is more confident, particularly since the report has obtained currency that the puddlers have concluded very wisely and sensibly not to demand the hot dollar this summer. If they (the puddlers) adhere to the position they have taken in this matter, there is reason to believe that the mills generally will run all summer, and this being the situation, the general outlook is more favorable as regards raw iron than it has been at any time since the mills were started up. There has been no change whatever in prices since the date of our last review; the mills have been able to obtain all the pig they wanted at $24, 4 mos., although it is but proper to state in this connection that some furnace men have been holding out of the market for some time past, refusing to sell at current prices. There is no question but the general situation favors sellers; it is very generally admitted that the consumption is in excess of the production; there is as much mill iron being consumed here in Pittsburgh as ever there was, while the production is very much reduced, not only here, but elsewhere, as a very large percentage of the furnaces have been out of blast for some time past, and unless there is a very decided improvement in prices, it is not likely that many of them will be re-lighted before Fall. It is not to be expected, in the present unsatisfactory and depressed condition of affairs, that there will be any decided improvement in prices, but we should not be surprised to see good mill irons command $25, 4 mos., between now and the 1st of July. We do not wish to be understood as having any desire to 'bull' the market, as we are writing in the interest of neither 'bulls' nor 'bears,' but the general posit on of the market at the present writing warrants the prediction in question.

MANUFACTURED IRON.—All the mills here are now in operation excepting the Wharton and Superior rail mills, both of which are bankrupt; and the production is as large as it ever was; even the old Wood mill, which has been standing idle for about three years, has been started up by the present owners, MULLIN & MALONEY, and the pudd ing furnaces of MCKNIGHT DUNCAN & Co. have been started up by BYERS, MCCULLOUGH & Co., who have got a lease of the mill in question. A good deal was said and written during the lock-out about Pittsburgh losing her trade, but subsequent events have demonstrated that this was more imagination than reality. Pittsburgh possesses natural advantages that enable her to compete successfully with all points, and the result is that while advices from competing points represent trade as being very dull, the mills here have about all that they can do, the best evidence of which is that they are all in operation, many of them working up to their full capacity; although it is true that prices are very close and afford but a very slight margin for profit—we refer now to ordinary sizes. Those mills having specialties, and there is scarcely one of them but has something of the kind, are doing well enough, as competition for these as yet has not become so active; and makers, in consequence, are able to keep prices up sufficiently to afford a fair return. Quotations for the ordinary sizes may be given on a basis of $2 35@$2 40 for merchant bars. The general tone and spirit of the market is firmer in sympathy with the raw material, and if the latter should advance the product will have to be advanced also.

San Francisco. May 20, 1875.

From the *Commercial Herald*.

The arrivals of Pig Iron have been liberal during the week, including 350 tons American per *Rose Welt*, 450 tons same from New York per *America*. The *Orpheus*, from Glasgow, brought 400 tons Scotch and English. These supplies are said to have been sold prior to arrival upon terms reserved. The *Granada* carried to New York, via Panama, 219 tons Selby Pig Lead. The *Cyphrenes*, from Sydney, brought 50 blocks Pig Tin. The market for manufactured Iron, etc., seems to be largely demoralized. Iron Pipe has been sold at 6c. per foot; Boiler Tube, 35@37½c. per foot. These are exceedingly low rates as compared with those ruling a year ago. Tin Plate is in improved demand. We quote Tin Plate, Coke, $9 25@$10; Charcoal do. $11@$11 50, according to brand; Charcoal Terne, $10 75@$11; ditto IX., $12 50; Banca Pig Tin, 28c.; Straits do., 24c.@25c.; Australian do., 23c. Lead of all descriptions is plentiful and cheap. There is said to be 6,000 tons Pig Iron now afloat for this city. Sales to arrive have been made as low as $34 50, while the spot price rules from $45@$48, in lots. We are informed that spot lots of American Pig Iron are offered at a decline—say $38 50.

St. Louis. May 27, 1875.

There is no quotable change in pig, bar or sheet irons. Considerable quantities of charcoal pig are sold and being delivered out of the heaviest stock lot of that grade that has accumulated in this State. The ore trade is rema hably active. Both railroads reaching the specular ores are on a strain to meet the demand for ore cars—the considerable demand being somewhat unexpected for ore transportation to such an extent. The Iron Mountain Company delivered on the dump, South St. Louis, over 6,000 tons of ore last week. The average receipts from that quarter will hereafter be large.

Zinc—Spelter, since the late arrangement among producers, is going off at better rates. We quote slab at 7¼c.

Lead.—Very large shipments of pig lead are daily going forward. A movement that we have not inquired into, is driving a good deal of lead over our heads in St. Louis. Direct ship-

ment reigns for the time being. The advance in domestic lead in New York has had no effect upon quotations in this market—6¼c. has become a stereotyped character in current values of soft lead. Still lead is worth 6¾c., and we see no reason for it stopping short of 6.50. Soft lead at present freight rates eastward is worth 6.60, with domestic in New York at 6c. gold, and gold at 116¼.—*Mines, Metals and Arts.*

[Would it not be in accordance with St. Louis ethics for our contemporary to give credit for the New York Metal Markets, which it takes from our columns, and to which, let us say, it is entirely welcome? But, neighbor, "follow copy,' please.—ED. E. & M. J.]

METALS.

NEW YORK, Friday Evening, June 4, 1875.

Gold Coin.—During the week past gold has ranged from 116⅛ to 117¼, and closed to-day at 117.

Bullion.—Fine silver bar is quoted at $1 22@$1 23 gold, per ounce, and fine gold bar, at par ($20 67, gold per ounce) to ¼ per cent. premium The decline in silver has been caused by a falling off in the demand and a greatly increased production from the Com tock Lode.

Copper.—Sales are reported in this market at as low as 22½c. and others at 22⅝c.@22¾c. In the aggregate we learn of about 200,000 lb. being sold, 50,000 lb. of which were said to be for export. To-day's quotations of Chili Bars, in London, is £83. New Lake copper will be in by Monday. The manufacturers are only buying from hand-to-mouth, believing in lower prices, although they are but lightly stocked. The large mining companies are firm at 23½c. but the smaller companies appear to be furnishing the market with all it wants under the present depressed condition, at the prices we quote above.

Messrs JAMES and SHAKSPEARE, of London, under date of May 21st, say: "Without any important transactions taking place, Bars have recovered the fall we noted in our circular of 14th inst., and now stand at the same figures as they did in the beginning of the month. The Chili charters continue moderate, those for the first fortnight of May being telegraphed as 2,100 tons pure, of which 900 in bars and ingots, 800 in ores and regulus for England, 400 bars for the Continent. Judging from the values ruling in Valparaiso, it would seem that producers and exporters have faith in eventually obtaining better prices on this side, as importations of good ordinary brands would now cost £82½ delivered here, without providing any commissions to merchants.

The deliveries of metal from the public stocks continue on a large scale, those for the first half of the month amounting in round numbers to 5,000 tons. It is, therefore, possible that on 1st proximo our statistical table will give a "gross total" of about 28,000 tons, at which comparatively low point it has not stood since 1st December last. The future course of the article is likely to prove interesting, as within the next few months it will be seen whether the operators for a fall have been right in their conjectures or not. Taking last year as a standard, the probabilities are against them, the figures then falling from 36,997 tons, on 1st May, to 27,741 tons on 1st December; and consumption being now on the same scale as then, whilst the quantity of metal afloat for Europe is no larger, there seems no apparent reason why the 30,163 tons of the 1st of the present month should not be reduced to a similar extent by 1st December next. The foregoing deduction may be erroneous; but, with an improving trade, and prospects of another bountiful harvest, it is difficult to foresee how any other result can take place."

Tin.—There is only a little business doing in a jobbing way in tin and tin plates. We quote Straits, Refined and L. & F. at 18¾@19c., and Banca at 23½c.; charcoal tin plates at $8 50@8 75; ternes, $7 62½@7 87½; coke tins, $7; and ternes, $6 75. Prices all gold.

Messrs JAMES and SHAKSPEARE, of London, under date of May 21st, say: "English continues in moderate demand at the current rates. In foreign descriptions a rather firmer tone is apparent, and holders have this week been able to effect sales, both of Straits and Australian, on more favorable terms; buyers do not yet appear willing to pay a sufficiently large advance to cause much change in the market quotations, but the present prices seem to be attracting the attention of operators."

Lead.—Small sales of domestic have been made at $5 95@6, gold; and about 100 tons of Western have been sold at $6 75, currency. The St. Louis market is more firm, and is quoted at 6¼c, currency, equal to about $6 95 currency here. Foreign is unchanged at 6½c., gold, with a sale of 100 tons on private terms.

Spelter and Zinc.—Combination prices—7.15@7½c. currency—are still maintained. We note a sale of 30 tons at these rates. Sheet zinc is quiet at 8¼c@8½c., gold.

Antimony—Continues firm, at 13c, gold, with nothing doing.

Quicksilver—This market is quoted 80c. and San Francisco 70c. per lb., and London £12 per flask.

The San Francisco *Commercial Herald* of May 20, says: "The *City of Peking*, for Hongkong, carried 190 flasks. The supply continues liberal, with a few New York orders in hand The export price of 65c. is continued, though 70c. is the jobbing rate."

FINANCIAL.

New York Stocks.

June 4, 1875.

The appointment of a Receiver for the Erie R. R. Co. has had a very depressing influence on the New York Stock Market, fluctuations have been wide and very irregular; the market closed yesterday weak, with an increase of sales and a decline in prices.

The following were sold at auction on the 2d inst.:—10 shares Union Mining Co, Allegheny Co., Md., $100 each, at 36¼; 200 shares Passaic Zinc Co., $100 each, 55¼: 200 shares American Coal Co., $25 each, 55¼; 390 shares Manhattan Gas Co., $50 each, 288¼ to 289¾; $7,000 D. & H. Canal, 7 per cent. bonds 109½.

Messrs. BABCOCK BROTHERS, 50 Wall street, and Messrs. G. G. HAVEN & Co, 17 Wall street, bankers, were offering at 97¼ per cent., a limited amount of the bonds of the Lehigh and Wilkesbarre Coal Company, due in 1900, bearing 7 per cent. interest, payable quarterly, and secured by mortgage upon 25,000 acres of the best coal lands in Pennsylvania.

Each bond is guaranteed by the Central Railroad Company of New Jersey, with the assent of its stockholders. By virtue of a special act of the Legislature a sinking fund of ten cents for every ton of coal mined is provided for the redemption of the bonds.

In respect to the security of these bonds, aside from the liability of the wealthy coal company issuing them, they bear the guarantee of one of the most prosperous and best managed railway companies in the world, the Central Railroad Company of New Jersey. The latter company is the carrier of the coals raised at the mines upon the coal company's lands, and, accordingly, has an immediate interest in developing and increasing the product of those mines.

DANIEL DREW and his son WILLIAM have retired from the direction of the Quicksilver Mining Company, and Mr. A. B. BAYLIS was elected President.

Quotations and sales of stock:

	Highest.	Lowest.	Closing.	Sales.
Pennsylvania Coal Co.	—	—	264	—
Consolidation Coal Co.	47	46½	46½	500
Spring Mt. Coal Co.	—	—	70	100
American Coal Co.	—	—	55½	—
Maryland Coal Co.	—	—	19	—
Cumberland Coal and Iron Co.	—	—	—	—
N. Y. & Nova Scotia Iron Co.	—	—	—	—
Del., Lack. & West. R.R. Co.	118¾	116½	118	2170
New Jersey Central R. R. Co	110¾	107½	108½	5088
Delaware and Hudson Canal Co.	120	119	119½	627
Quicksilver Mining Co. prefrd.	21⅞	21½	21½	300
" " " Common.	—	—	15½	100
Mariposa Land & Min. Co. ass. pd.	—	—	—	—
St. Louis & Iron Mountain R. R.	—	—	20	100
Lehigh & Wilkes-Barre Coal Co.	—	—		—
Manhattan Gas Co.			289¾	—
Total Sales.				8985
Sales for the week previous				5945
Increase.				3040

The following are the sales of bonds for the same period:

	Amount.		Price.	
Del., Lack. & W. RR convertible,	$1,000 at from		116¾	to....
N. J. Central RR. 1st consolidated mortgage bonds	27,000	"	105¾	" 105¾
St. Louis & Iron Mount'n 1st Mtg bonds,	....	"	..	"....
St. Louis & Iron Mountain, 2d Mtg. bonds	....	"	..	"....
N.J. Central Con. Convt.	3,000	"	108½	" 109⅛
" " 1st Mtg. N.	....	"	..	"....
Del. & Hudson Canal, 1st Mtg. Reg. bonds, 1891	....	"	..	"....
Del. & Hudson Canal, 7s, 1894,	11,000	"	107	" 109
Del. Lack. & W. R. R., 2d Mtg.	....	"	..	"....
C. & O. R.R. 1st Mtg. Coupon on	1,000	"	40	"....
Total Sales.	$43,000			

Philadelphia Stocks.

PHILADELPHIA, June 4, 1875.

The Philadelphia Stock market closed excited yesterday, after having been generally unsettled during the week. No doubt, the irregular condition of the New York market influenced the market here. Transactions in both stocks and bonds for the week exhibit a falling off as compared with those of the week previous.

The following securities were sold at auction on the 1st inst.: 900 shares of the Ringold Iron and Coal Co. at $25; $26,000 Emaus Iron Co 2d mortage coupon 7's at $20, $14,000; Emaus Iron Co. 1st mortgage coupon 7's at $97½, $2,000; H & B T. R. R. Consolidated coupons 7's at $67½.

On the 1st of June interest was payable on the following bonds: Lehigh Valley Railroad do. do. consolidated mortgage 6s of 1923, do. do. registered 6s of 1923, on the Pennsylvania and New York Canal 7s, on the Reading Railroad general mortgage registered 7s, do. do. gold 6s, on Reading Coal and Iron Company 7s, on Lehigh Navigation 6s of 1877 and 1882, on gold 6s of 1897 (15th). The dividends payable in June are quite small. The Lehigh Valley Railroad Company have completed their extension road across New Jersey from Easton to South Amboy, on which they had expended some ten millions of dollars, and would require some two millions of dollars more to finish and equip it. In order to raise this additional sum the Lehigh Valley Company have decided not to further increase its bonded debt for the purpose, but to raise the necessary amount by a ten per cent. stock distribution. Hence notice is given that all stockholders of the Lehigh Valley Railroad Company are entitled to subscribe for additional stock at par, in the proportion of *one* share for every *ten* shares standing to their credit at the closing of the books of the Company, on June 15, instant, payable either in full, at the time of subscribing, or in quarterly instalments of 25 per cent., at the time of the four dividend payments, namely, in July, October, January and April. Interest will be allowed on all instalments paid in proportion to the dividends made on full paid stock. Receipts bearing no interest will be given for fractional parts of shares, but payment for such fractions must be made in full at the time of subscription. These receipts will be convertible into stock during the month of August, 1875, when presented in such amounts as will make even shares. In the meantime, the receipts will be dealt in as scrip, sold by those having fractions which they wish to convert into cash, and purchased by others desirous of making up even shares. As the credit of the Lehigh Valley Railroad Company stands high, its stock ruling in the market at 24@25 per cent. above par, present holders will, no doubt, take the entire distribution, especially as they will find it convenient to pay for it from their quarterly dividends hence to the middle of April next. This new road has been wholly built by the Lehigh Valley, whose entire property, without debt or stock representation, it is.

Quotations and sales of stocks:

	Highest.	Lowest.	Closing.	Sales.
Reading R. R. Co.	54⅛	53	53⅛	7370
Lehigh Valley R. R. Co.	62¾	62	62¾	638
Little Schuylkill R. R.	—	—	50	11
Catawissa R.R.	—	—	21	—
" " Preferred.	—	—	42	—
" " New Preferred	—	—	37¾	—
Huntingdon and B. T. R.R.	—	—	7	—
" " " Pref'd.	—	—	14	—
Minehill R.R.	—	—	53	164
Lehigh Coal and Nav. Canal.	49¾	49⅛	49⅛	8104
Morris Canal	—	—	51¾	10
" Preferred	—	—	128	—
Pennsylvania Canal.	—	—	—	—
Schuylkill Navigation Canal.	—	—	7¾	—
" " Preferred.	—	—	14¾	—
Susquehanna Canal.	—	—	6	—
Westmoreland Coal Co.	—	—	80	—
Buck Mountain Coal Co.	—	—	—	—
Cambria Iron Co.	—	—	17⅜	
Locust Mountain Coal Co.	—	—	—	—
Emaus Iron Co.	—	—	—	—
Crane Iron Co.	—	—	—	—
Total sales.				16,297
Sales for the week previous				20.315
Decrease.				4,018

Sales of the various bonds for the period under review have been as follows:

	Amount.		Price.	
Reading RR. 6s, 44,80.	....	at	—	to ....
Catawissa RR., new 7s.	....	"	..	" ....
H. and B. T. RR., 2d mortgage, 7s.	....	"	..	" ....
Lehigh convt. gold loan	5,000	"	105¾	" ....
Pa. and N. Y. Canal. 7s.	1,000	"	105	" ....
Schuyl. Nav. 6s, '82.	3,900	"	81¾	" 82
L. V. RR. 6s, coup.	....	"	....	" ....
H. and B. T. 1st Con. 7s. bonds	....	"	....	" ..
R. C. and I. Co. irregular mort. bonds, Brady Tract.	....	"	..	" ....
Lehigh Nav. 6s. 1884.	....	"	..	" ....
Reading RR. debenture bonds.	....	"	..	" ....
" " R. G. M. 7s. coup.	12,000	"	108¾	" ..
" " new convertible 7s.	4,500	"	107¾	" ....
" " 7s, 93	2,000	"	108	" 108¾
Reading C. and I. Co. debenture bonds.	....	"	..	" ....
Reading C. and I. Co. mort. bonds, Tamaqua Tract.	....	"	..	" ....
Reading C. and I. Co. mort. bonds, St. Clair Tract.	....	"	..	" ....
R. C. & I. Co, Wetherill tract	....	"	..	" ....
" " " " Locust Mountain Summit Improvement tract.	....	"	..	" ....
R. C. & I. Co. Heifenstim tract.	....	"	..	" ....
Lehigh Valley RR. 6s, reg.	14,000	"	103	" 103¾
" " " 7s.	8,000	"	108¾	" 108¾
Lehigh Coal & Nav. Co. 6s, gold loan.	3,000	"	103¾	" ....
" " " " 6s, 1877.	....	"	..	" ....
" " " " RR. loan.	....	"	..	" ....

Schuylkill Nav. 6s, '95		1,000	"	81	" ....
" " 7 per cent. boat loan..		500	"	90¾	" ....
" " 6s, '72		....	"	..	" ....
" " 6 p.c. Impvt. loan		....	"	..	" ....
R. C. & I. Co., Glenlworth tract		....	"	..	" ....
Chesapeake & Delaware Canal, 6s		....	"	..	" ....
Susquehanna Canal, 6s		....	"	..	" ....
Pennsylvania Canal, 6s		....	"	..	" ....
Shamokin Valley & Pottsville R.R., 7s		....	"	..	" ....
Del. Div. Canal, 6s		....	"	..	" ....
Morris Canal, 1st mtge. 6s		....	"	..	" ....
Total Sales		$54,900			

Gold and Silver Stocks.

SAN FRANCISCO, June 2d, 1875.

The San Francisco Stock Market continues firm with the majority of quotations considerably in advance of our last.

We note an assessment of $5 per share levied by the Caledonia Mining Company, delinquent June 10th. The Sierra Nevada Mining Company has levied an assessment of $1 per share delinquent July 1st.

Quotations June 2d, 1875.

Gould & Curry	18	Overman	63
Savage	101	Raymond & Ely	44
Chollar Potosi	79	Eureka G. V.	7
Ophir	56	Best & Belcher	48
Hale and Norcross	39	Kentuck	14
Crown Point	33	Meadow Valley	7
Yellow Jacket	77	Alpha	18
Eureka Consolidated	66	Sierra Nevada	11
Belcher	28	Union Consolidated	
Imperial	7	Mexican	2
Consolidated Virginia	425	Caledonia	
California	61	Silver Hill	

Copper Stocks.

BOSTON, June 3d, 1875

An advance of $1 per share in Calumet and Hecla is the only exception to a decline of Copper Stocks. The market has been quiet during the week.

Quotations are as follows:

Allouez	13	National	..
Calumet and Hecla Co.	152	Petherick	15¼
Copper Falls	9	Quincy	40
Central	31	Ridge	6¾
Franklin	....	Rockland	1

American Institute of Mining Engineers.

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III. Blank proposals for membership can be had on application to the Secretary.

IV. The second volume of Transactions has been mailed to all home members and associates not in arrears. Any member who failed to receive his copy will please notify the Secretary promptly. The Institute is not responsible for the loss of the volume in those cases where members have changed their residences and have omitted to inform the Secretary. Volumes I. and II. will be sent, post-paid, to non-members, at five dollars each.

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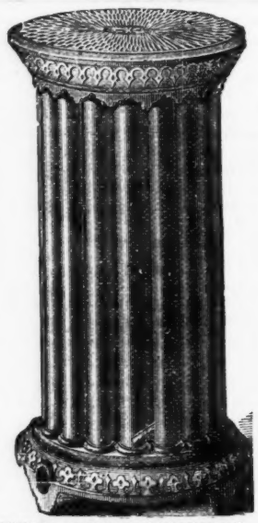

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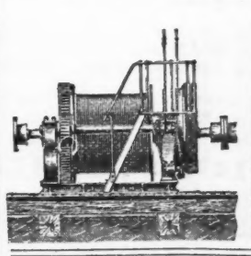

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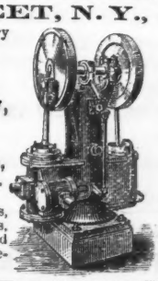

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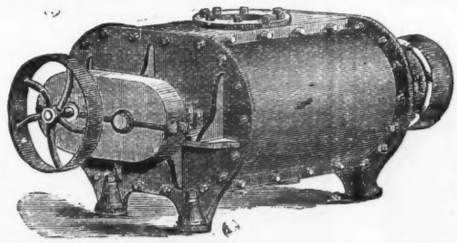

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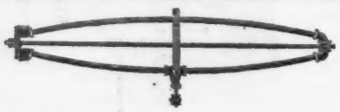

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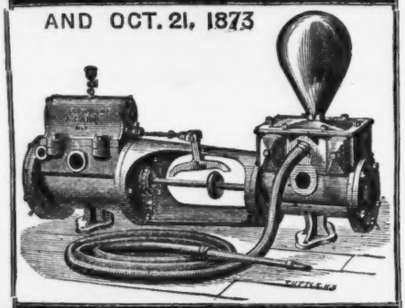

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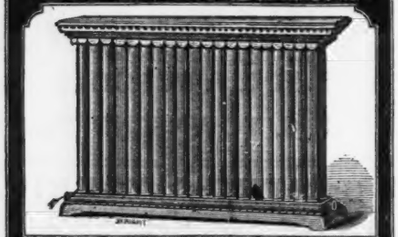

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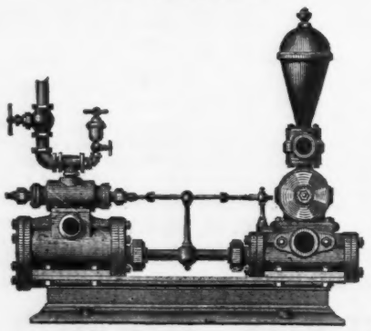

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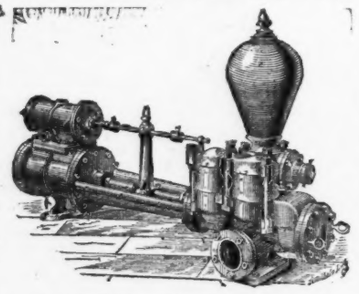

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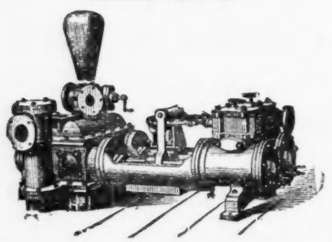

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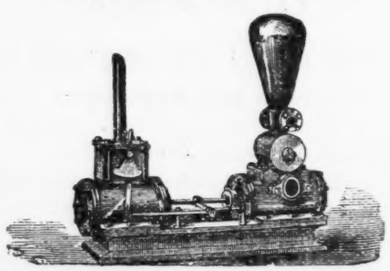

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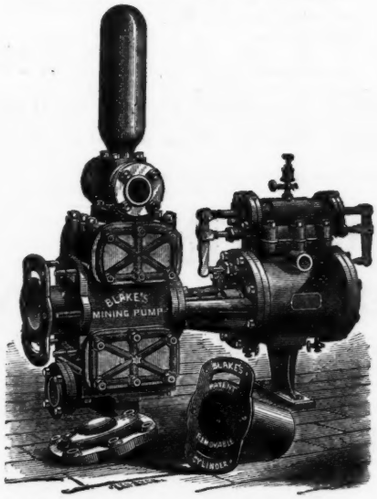

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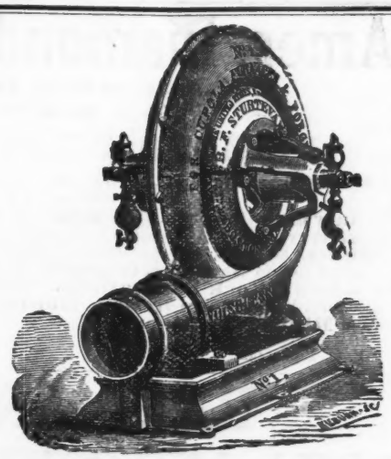

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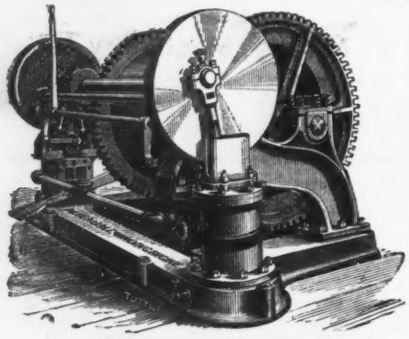

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